

DIGITAL

Journal

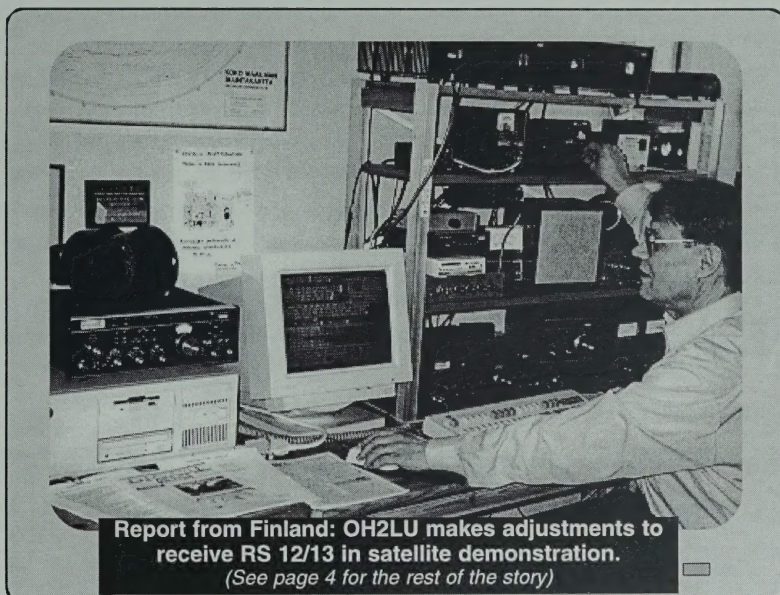
Formerly published as the
RTTY Journal, and the
RTTY/Digital Journal

The Premier Source of
Digital News and Knowledge
Since 1953

Published by the International Digital Radio Association • Volume 44, Number 5 • May 1996 • \$3.50

IN THIS ISSUE

Report from Finland	4
Beedle Beedle	7
Pactor - II	8
DX News	10
Digital Satellites	12
Coherent CW	13
International Scene	14
Gone to Dayton	15
Across the Pond	17
Contesting	19
The Contest Chair	22
NTS	24
The Last Word	26
Software Store	27
Classifieds	26



Report from Finland: OH2LU makes adjustments to receive RS 12/13 in satellite demonstration.
(See page 4 for the rest of the story)

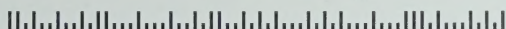


Digital Journal (USPS 391-850) is published monthly, for \$25 per year by the International Digital Radio Association, 1908 Howell Branch Road, Winter Park, FL 32792. Second-Class Postage paid Winter Park, FL and additional entry offices. Postmaster: Send address changes to Digital Journal, P.O. Box 2550, Goldenrod, FL 32733-2550.



International Digital Radio Association
P.O. Box 2550
Goldenrod, FL 32733-2550

SECOND CLASS
POSTAGE PAID
GOLDENROD, FL
32733-2550



N8GNJ--Expiration: 03/ 98
STEVE STROH
14919 NE 163rd St
Woodinville WA 98072-8957 USA

=====

Copyright 1996

IDRA • All Rights Reserved

Permission for reproduction or dissemination of
any of the material provided herein must be
obtained in writing from the Publisher.

DSP4100



DSP4100

HF Radio DSP Modem
STAND-ALONE
COMPACT
PORTABLE
HIGH PERFORMANCE

-- all the features you've been asking
for in a CLOVER DSP Modem --

At long last, the proven HAL DSP Modem architecture, modes, and software are available for applications that cannot use plug-in PC cards. While the DSP4100 closely follows the concepts of the PCI-4000, now you get CLOVER-II and high-performance TOR, Pactor, and RTTY in a stand-alone DSP modem. Requiring only 0.25A from a 12V battery, the 2.75 lb DSP4100 will go anywhere you can take your LAP-TOP PC and transceiver. Software changes are easily made in the field. Just pick-up new software from HAL and upload it to the DSP4100 via the serial port for storage in non-volatile *FLASH* RAM. A 2nd RS-232 port is included for customized systems. Call HAL now for complete details.



HAL Communications Corp.

P.O. Box 365, Urbana, IL 61801 USA

Phone (217) 367-7373 Fax (217) 367-1701 E-Mail halcomm@prairienet.org



* * * NOTICE OF MEETING * * *

Please take notice that the meeting of members of the International Digital Radio Association will take place at the Radisson Inn, Dayton, Ohio at 9:00 am on the 17th day of May, 1996. The purpose of the meeting will be the election of Ron Stailey, AB5KD and Glenn Vinson, W6OTC as directors and such other business which may come before the meeting.

Allan E. Matlick, Secretary/Treasurer

PROXY STATEMENT

INTERNATIONAL DIGITAL RADIO ASSOCIATION

I, the undersigned _____ hereby
(signature)

appoints **Allan E. Matlick** as proxy for the purpose of voting in my place and stead at the annual meeting of members of the International Digital Radio Association for all matters which may come before the meeting to be held on the 17th day of May, 1996 at the Radisson Inn, Dayton, Ohio.

Name _____
(Please Print)

Dated: _____

Callsign _____

Please fill out and mail to the
IDRA • PO Box 2550 • Goldenrod, FL 32733-2550
or e-mail your response directly to:
matlick@gate.net

DIGITAL Journal

Published by the International Digital Radio Association
PO Box 2550, Goldenrod, FL 32733-2550
Tel (407) 677-7000 • FAX (407) 671-0194

INTERNET:

WWW Site at: <http://www.iea.com/~adrs>
FTP Site at: <ftp.iea.com/public/adrs>
Internet/E-mail: adrs@iea.com
Editor's Desk: <http://www.n2hos.com/digital/>

Editor

Jim Mortensen, N2HOS : (914) 276-1058 / FAX (914) 276-1059

Editor Emeritus

Dale Sinner, W6IWO

General Manager

Tom Arvo, WA8DXD : Tel/FAX same as IDRA

Directors/Officers

Paul Richter, W4ZB (President)
Jim Mortensen, N2HOS (Vice President)
Al Matlick, W2TKU (Secretary/Treasurer)
Jules Freundlich, W2JGR • Joel Kandel, KI4T
Peter Schulze, TY1PS • Barry Garratt, VE3CDX

Editorial Staff

Bob Boyd, W1VXV • Neil Campbell, ON9CNC • Jules Freundlich, W2JGR
Steve Holton, N2QCA • Glenn Vinson, W6OTC
Richard Lawton, N6GG • Crawford Mackeand, WA3ZKZ
Doug Hall, KF4KL • Ron Stailey, AB5KD • Jim Berner, K8OSF
Bob Lewis, AA4PB • Dave Wolf, W05H • Betsy Townsend, WV7Y
Paul Richter, W4ZB • Peter Lumb, G3IRM • Fred Salzwedel, DK4ZC
Hal Blegen, WA7EGA • Roy Gould, KT1N • Don Hill, AA5AU
Dave Medley, K16QE • Tom Housworth, N3PGG

Membership Rates & General Info

Rates =	1 Year	2 Years	3 Years*
No. America	\$25	\$47	\$68
1st Class US	\$32	\$60	\$85
DX - Surface	\$32	\$60	\$85
DX - Airmail	\$42	\$78	\$114

***Deduct \$2 more if a gift subscription is added to the total**

Surface mail is not recommended to the former USSR Republics, Asia, Oceania or the Middle East. Payment must be in US funds. Allow 6 weeks on new subscriptions. Visa/MasterCard accepted. Make all remittances payable to the International Digital Radio Association.

The principal goal of the IDRA is to advance digital technology as it applies to amateur radio and promote the wisest use of the digital portion of the spectrum. Being a member makes you a partner in advancing these digital goals. IDRA is a not-for-profit corporation and contributions to the Society are deductible for income tax purposes to the extent allowable under the tax laws of the United States.

Have you checked your mailing label lately?

If the **Expiration 05/96** appears next to your name, it means your **IDRA** membership, and subscription to the **Digital Journal**, expires with this issue.

To keep your membership, and all the latest digital news coming your way, just fill out the coupon on page 29 and mail it -- **Today!**

The most powerful DSP-Modem is now available:

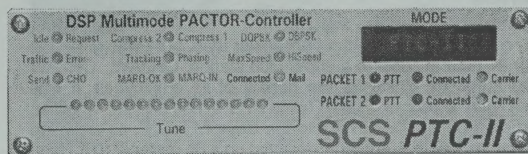
SCS PTC-II

The Multimode-Multiport-Controller with PACTOR-II, the fastest digital mode on HF!

The PTC-II-Hardware:

- Three simultaneously available communications ports: HF and up to two VHF/UHF Packet ports.
- Separate transceiver control port for remote operation of Icom, Kenwood and Yaesu equipment.
- True 32-bit system with the Motorola RISC processor 68360 as CPU, clocked at 25 MHz.
- 16-bit Motorola DSP 56156 clocked at up to 60 MHz (computing power: 30 MIPS).
- Expandable to 2 MB of static and 32 MB of dynamic RAM, firmware stored in flash memory.
- Modem tones programmable in 1 Hz steps.
- All digital modes can be implemented.
- All advantages of the PTCplus are also included.

For more details on the PTC-II and PACTOR-II see the January to April '95 issues of the Digital Journal!
Basic PTC-II with 512k static RAM: 950 US\$, Airmailing: 35 US\$ - VISA and MASTER cards are accepted!



The PACTOR-II-Mode:

- In good conditions up to 30 times faster than AMTOR, up to 6 times faster than PACTOR-I.
- Most robust digital mode: Maintains links in conditions with a signal to noise ratio down to minus 18 dB.
- Best bandwidth efficiency: Even using the fastest mode, PACTOR-II requires less than 500 Hz (at minus 50 dB).
- Automatic frequency tracking allows the same tolerance when connecting as with PACTOR-I (+/- 80 Hz).
- Newly developed on-line data compression system (PMC) reduces the data by about factor 2.
- Fully backwards compatible with all known PACTOR-I implementations, including automatic switching.
- Utilizing of the latest coding technology.

SCS - Special Communications Systems

Roentgenstrasse 36, D - 63454 Hanau, Germany, Phone/Facsimile: +49 6181 23368

Report from Finland

by Jules Freundlich, OH2W2JGR
825 Summit Ave., Apt. 1401 • Minneapolis, MN 55403

The morning of my departure from the Twin Cities (Minneapolis/St. Paul) dawned bright and clear with the temperature at 0 deg. F (-18 deg. C). It looked like a great day for flying. The 747-400 that was to take me over the ocean did not know that Murphy's Law was to take effect that morning. We departed for Amsterdam very close to schedule and proceeded to climb to the northeast.

About 15 minutes into the flight I noticed on the cabin navigation situation display (a great example of applied digital technology) that we were flying at a steady ground speed of 330 mph, at a constant altitude of about 17000 feet. We should have still been climbing, and flying at a speed in excess of 400 mph. A few moments later we were advised there was a "minor" technical problem. The wing flaps could not be retracted, and therefore the aircraft was unable to climb to the assigned altitude. So we flew for 45 minutes to get rid of enough fuel to reach a permissible landing weight.

We landed back at MSP airport exactly three hours after we had left. The ground maintenance crew isolated and repaired the "minor" problem within 30 minutes. My 399 fellow passengers and I were airborne again exactly four hours after our original departure. Of course I missed my connection to Helsinki, but by the time we arrived in Amsterdam, through the miracle of modern computerized communications, all transfer passengers had been rebooked on the first available flights. Net overall arrival delay at Helsinki was 4-1/2 hours....not too bad!

My first trip to Finland had occurred in 1969 to attend my eldest son's wedding to a Finnish girl. The first opportunity to operate ham radio as W2JGR/OH2 came in 1975, shortly after my first grandson (now OH2LKI) was born. That was my first experience operating at a DX location. I was fortunate to have as my ham radio host a thirty-something fellow named Martti Laine, OH2BH. I had written to the Suomen Radioamatööriliitto (SRAL) to inquire as to where I might rent a transceiver during my visit. In response the SRAL designated Martti to be my radio host.

Not only did I not have to rent a transceiver then, but I was given the keys, for 24 hour access, to a super club station, OH2AW. OH2AW was sponsored by Nokia for the benefit of its employees. It was equipped with a pair of Drake Twins and a home-brew amplifier. Situated on a peninsula jutting into the Bay of Finland, its crowning feature was a TH6DXX antenna mounted on a 66 meter (210 ft.) high tower. When I visited the station again in 1977, a four element 20 meter Yagi on a separate 100 ft. tower had been added. During one of my operating sessions, a lightning strike knocked out the 20 meter Yagi, but I still had the old TH6DXX as backup. Unfortunately that station, at its beautiful location, is no longer in existence.

Among the numerous highlights of that trip was meeting many of the country's top DXers, including visiting with the late legendary Armas Valste, OH2VB, famed Olympic track coach, and associate of Paavo Nurmi, the "Flying Finn." At that time, Armas was in his 80's, and led the world with DXCC countries confirmed. All my trips to Finland demonstrated what true ham radio hospitality can be. For details of my trip in 1977, including a description of the consideration tendered me at the SRAL summer camp that year, see my article in January 1979 CQ magazine entitled "Report From Finland." This 1996 trip again showed how OH hams excel as hosts to their visiting brethren.

The primary purpose of this trip was to visit my fourth Finnish grandchild, whom I had never seen. Family reunions were to be supplemented by renewing radio friendships, and doing a bit of radio operating. Following the initial family get-togethers, it was time to check out the bands.

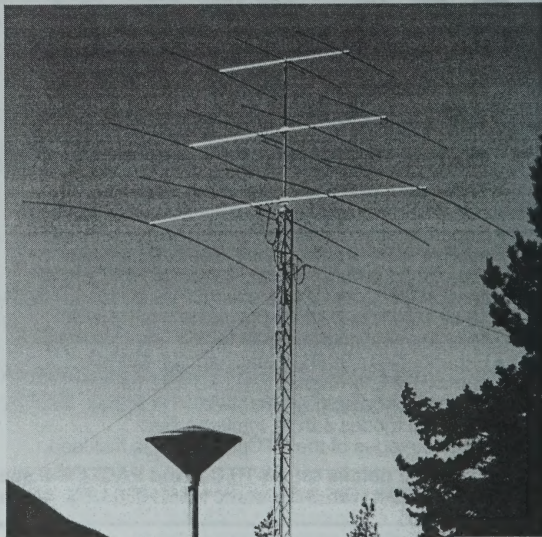
On the afternoon following my arrival I was picked up at my hotel by Tapani Juhola, OH2LU, for an afternoon of RTTY DXing. I had originally met him in 1977. Tapani, now retired from IBM after over 30 years as a computer systems marketing specialist, has the "complete" ham station, capable of most modes including satellite and SSTV. As noted in previous issues of the Digital Journal, he is a world class RTTY contester. He is an enthusiastic user of the OH2GI-HAM SYSTEM program. This program was originally a simple logging program, but over time, with Tapani's assistance, it has been developed into a comprehensive multifeature program rivaling some of the contest/logging programs popular in the USA. See the sidebar.

Upon my arrival in his shack, I found he had prepared a set of Hostmaster II macros for my convenience. An easy to read menu allowed me to quickly familiarize myself with station operations. On went the switches and I was off to several hours of RTTY DXing. Mother Nature smiled and conditions were very good to the States and to the Arctic. A couple of CQ's always stirred up some action. This first day's activity was highlighted by contacts with many good friends in the States, Europe and the Middle East. Being called by JW/TM5E/MM in the Arctic Ocean provided a pleasant surprise.

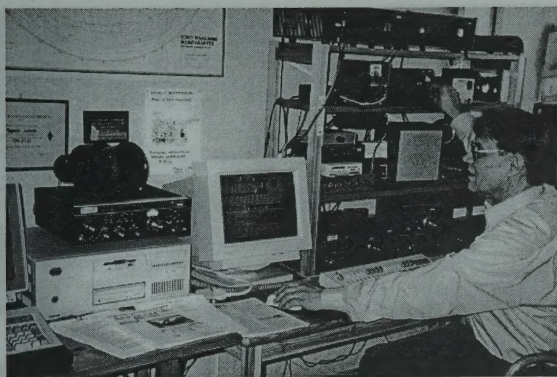
Serge at JW/TM5E/MM told me he was on the 30 meter sailboat 'Antarctica' near Svalbard, carrying a three year transarctic expedition headed by the famous polar explorer, Will Steger of Minnesota. They hope ultimately to transit the Northwest Passage. Not a bad catch for a few hours at the keys.

Two days later I was back in Tapani's shack and found that he had fine tuned the macros and improved the operating table ergonomics for me. I had not complained, but like most Finnish hams I know, he is a perfectionist and wanted things to be as comfortable as possible for me.

On this second day conditions were not as good. The action was slower. When the operating periods extended into the dinner hour, I



The Christmas Tree at OH2LU



Tapani, OH2LU adjusts the antenna heading to pick up RS 12/13 for satellite demonstration

was always assured of a tasty meal, of typical Finnish cuisine, prepared by "Kepa", Tapani's XYL. The following day conditions had improved somewhat and I was able to chat with, among others, several stateside hams who needed OH as a new one, and I provided the first 20 meter contact for a Finnish ham who had just upgraded his license. All in all, it was a most satisfactory day.

Six days after my arrival, on a Saturday afternoon, Tapani organized and hosted, for my benefit, the "The Kirkkonummi Ham Festival". In attendance were: Dave, OH2/K8MN, has recycled back as Information Systems Management officer at the American Embassy following his African tours at A22, 9L, and J52.

Jorma, OH2KI, is active as a CW/SSB contester and has operated from Gibraltar as ZB2X over the past two decades.

Jari, OH2BU, aside from being an active DXer is President of the SRAL (the Finnish equivalent of the ARRL). The SRAL includes 97 percent of the Finnish ham population (5000+) as its membership.

Jukka, OH2GI, is the creator of the OH2GI-HAM SYSTEM. In 1994 he provided Monk Apollo with his first Pactor QSO from SV2ASP/A on Mount Athos.

Tapani, OH2LU was the first person in Finland to hold a two way Pactor QSO. A few days later, his daughter Tytti, OH2LXZ, became the second. I learned, also, that Tapani pioneered SSTV in Finland.



Dave, OH2/K8MN

This was not just an informal gab session. Tapani had organized an agenda suitable for an occasion to be attended by hundreds, rather than a handful. Following a short welcoming speech, he turned the floor over to the "guest of honor". This gave me an opportunity to put in a plug for the IDRA and the Digital Journal. Tapani's supply of back issues of the DJ made good handouts. (If we get a couple of new memberships I might consider billing the IDRA for my trip expenses!)



Jukka, OH2GI and Jorma, OH2KI

We were then treated to a one hour demonstration of the OH2GI-HAM SYSTEM program. This universal multimode contesting/logging program, written for the KAM, has been under development for a number of years. Highlights of the program's features can be found in the sidebar.

What was next listed on the agenda as a "Coffee Break" turned out to be a full course lunch prepared by Kepa.



Jukka, OH2GI, Jorma, OH2KI, Thomas, OH2LKI

Fully refreshed we returned to the shack in time to witness a demonstration by Tapani, as he made a couple of CW QSO's via the Russian RS 12/13 satellite. Using 10 and 15 meters, with no special antenna systems, the demonstration was an eye opener for all present. The final ham festival formal feature was a color SSTV demonstration, on 15 meters, arranged between OH2LU and OH2JBV who was located a few kilometers away. This went off as scheduled and provided a fitting conclusion to the four hours of festivities. I then sat down at the rig and logged several RTTY stations using the OH2GI program.

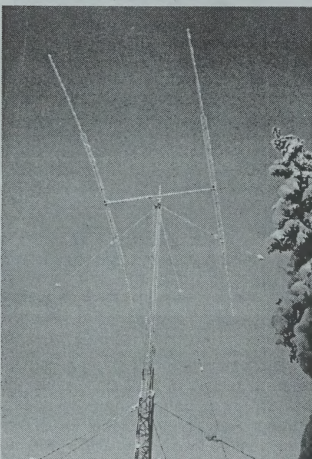
The next afternoon I was picked up by Kari, OH2BP. Kari lives in a beautiful rural area called Tuusula, about 30 km north of Helsinki. His shack is on the second floor of his home. It is equipped with a sleeping facility for overnights like myself. This session gave me a nice opportunity to work with a new JRC JST-245 transceiver. I was duly impressed with its ease of operation. I used the WF1B program in the DXpedition option. If you are interested in chatting, more than running rate, this option is quite slick. Click on the station of interest to capture the call sign. Start a transmission using Alt-K, and then use the programmed F-keys along with informal text within the chat mode. Hitting Alt-K again turns off the transmitter. Hit "LOG" and you have captured the QSO. The hospitality shown by Kari and his XYL made up for the poor propagation that day.



Dave OH2/K8MN, Jari, OH2BU, Tapani, OH2LU

Later, on two separate occasions, Jukka, OH2GI, took me to his beautiful super station. He is located in Espoo, about 25 km. north-west of Helsinki, on a hill in a sylvan setting, amidst a forest of towering pines, birches and hemlocks.

For 10/15/20 meters he has a KT-34A. A two element KLM beam is used for 40 meters. See photo. His 80 meter antenna is an unusual inverted vee of his own design. Both legs contain 24 meters of wire. Portions of each leg are folded back on themselves several times. These multifolded sections act as linear loading elements. A look at some of his contest logs confirmed the efficacy of this antenna.

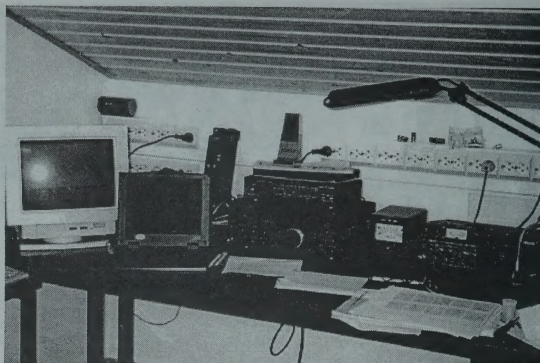


The 40 meter beam at OH2GI

supply of nourishment for the inner man was provided.

On my last evening at OH2GI, just as I was getting ready to leave, Jukka invited me to look at the TV in his living room. Lo and Behold! There, in living color, were all the current DX spots on the local Packetcluster, just as they appear on your computer screen. It seems that all three local TV channels in Helsinki are equipped with text subchannels. These subchannels contain about a thousand pages of text, which cover hundreds of subjects such as sports, business, news, etc. An index, or a specific subject is readily accessed by entering a three digit code on the TV's Remote Control Unit.

Only Ch.1 has the interface to the cluster. Entering Code 100 gets you the index. Entering Code 460 brings up the title page of nine more pages of amateur radio information, including the cluster page. So you don't even have to be in the shack to monitor the cluster! For those hams in rural areas without access to a packetcluster, their garden variety TV set (if fitted with the text option) allows them to



The shack at OH2BP sports a new JRC JST-245 Transceiver

keep up with the DX activity. I was told that this display of packet cluster DX spots on a commercial TV station text channel is unique in the world.



Kari, OH2BP and his XYL

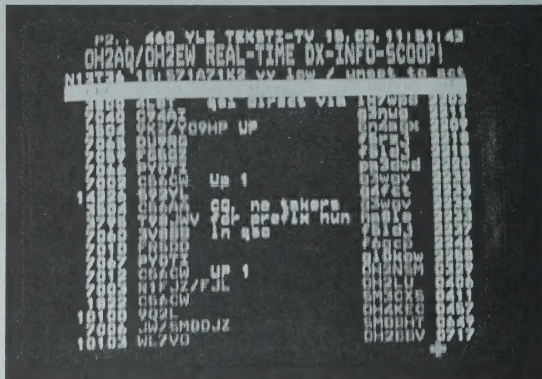
grandson, Thomas, OH2LKI, who reached his 21st birthday on St. Patrick's Day, the day after my return to the USA, for ferrying me around when all else failed. Finally my thanks to my son, Roger and all his four children for allowing me to take precious time away from being with them, so I could pursue this crazy hobby.

On KLM Flight 665 over the North Atlantic enroute Minneapolis/St. Paul. 16 March 1996

Final Note: The Internet proved to be a useful supplement to my shack hopping. Through the efforts of OH2LU, my expected activity was often announced by e-mail to both the w1b and the digital-dx reflectors. No fancy Web pages were required. Feedback from the field came to me via Tapani's e-mail address.

Acknowledgments: Thanks to OH2LU, OH2GI, and OH2BP for the generous use of their stations, and to their XYL's for keeping me

fed. And thanks to my



DX Spots on Helsinki TV Ch. 1

OH2GI-HAM SYSTEM Version 3.0

Introduction:

OH2GI-HAM SYSTEM is a comprehensive on-line digital contesting and logging software including facilities for post-contest paperwork. OH2GI-HAM-SYSTEM supports practically all existing digital contests and easily adapts itself into most CW contests. OH2GI-HAM SYSTEM facilitates also normal digital and CW QSOS, and its logging facility is useable for other modes.

Features of OH2GI-HAM SYSTEM V3.0 support the following:

KAM Versions 5 and up (suggested) or optionally PK-232 for two TNC-system CW, RTTY, AMTOR, PACTOR and G-TOR modes (only RTTY with PK-232)

All digital contests, adaptable for CW contests

Normal digital and CW operation

Logging on other modes

QTC traffic in WAEDC contest

Post-contest paper work

Off line contest logging

Online statistics and score calculations

QSL printing

Automatic duplicate control

Automatic multiplier identification

Support operation with or without mouse

Automatic name look-up and automatic name file update

ANSI for PACTOR mode

Online back-up file

File transfer from PC to HF port (RTTY, PACTOR etc.)

Online message buffer swapping

Online message buffer editing

Online HELP files

DOS command support.

Online DX Cluster (HOST mode of KAM or two_TNC system):

File transfer to Cluster

File / info transfer from Cluster to HF (RTTY, PACTOR etc)

DX info transfer to Cluster

Statistics transfer to Cluster

useful e.g. for Multi-op stations when some of the operators are at home searching for multipliers and passing the info over Cluster to the contest station

WARC / SSB / VH F filter for Cluster spots

DX spots on off line mode (Cluster DISCONNECTED) (Spy-mode)

HOST-MODE

The OH2GI-HAM system is designed to run in the HOST mode with KANTRONICS-KAM TNC or by two_TNC system (PK-232 and KAM)

The HOST mode means:

The computer screen is split into two areas: HF area and DX Cluster area (packet), while in a QSO you can see the DX spots from DX Cluster on same screen.

Also you can send an information from HF screen to the DX Cluster and vice-versa.

System requirements--

- PC with hard disk free space 1 M, color display, Cache (Smartdrive) suggested (>0.5M bytes), and Virtual disk (RAMDRIVE in CONFIG.SYS) suggested 250 Kb.
- DOS version 5 or later or OS/2 WARP VS
- Diskette drive for 2M diskettes (1.4M)
- Kantronics KAM V5 or later at 9600 bps in terminal mode (INTF TERMINAL, refer to KAM user manual.)
- It two_TNC system selected then PK-232 also needs at 9600 bps.
- COM adapter, port COM-1
- Mouse and program for Mouse (for Two_TNC system COM-1 and COM-2 and mouse in mother-board) Note!!! in two_TNC system cannot use COM-3 or COM-4 for MOUSE
- E, EXE editor if E, EXE missing then you need a E.BAT file with data: C:\DOS\QBASIC\EDITOR %1 or %xxxxx%1 (xxx=editor program)
- Connect KANTRONICS-KAM to COM-1 or two_TNC system, connect PK-232 to COM-1 and KANTRONICS-KAM to COM-2

Currently Supported Contests

SAC CW CONTEST • CQWW RTTY/CW CONTEST • VKZL CW CONTEST
ARRL GW CONTEST • ARRL RTTY ROUNDUP
BARTG DIGITAL CONTEST • ALL ASIA CW CONTEST
VOLTA RTTY CONTEST • EA RTTY CONTEST
ANARTS RTTY CONTEST • SARTG DIGITAL CONTEST
REF CW CONTEST • SP RTTY CONTEST • JARTS WW RTTY CONTEST
WAEDC RTTY CONTEST • WPX RTTY/CW CONTEST

Jukka Kallio (OH2GJ)

Voftontie 10, FIN-02820 ESPOO, FINLAND

Tel ... 358-0-865979

Packet.... OH2GI@OH2RBG.FIN.EU

Internet.... oh2g@capcuf.fi

Beedle Beedle

A series of digital snippets

by Crawford Mackeand, WA3ZKZ

115 S. Spring Valley Rd. • Wilmington, DE 19807

Distinctively Digital

Given that this business of digital ham radio seems to appeal to many folk who (not including your contributor) are, or claim to be, graphically minded, I thought that I would go take a look at my stacks of QSLs and see how many imaginative digitally oriented cards I found. Here's the list, and its not much of a haul!

Stateside first. I find one with his call in the old paper tape mode, and one with a border of RYRYRYRYs. Both old cards. A few have morse keys (6) and two have their calls in code. Total. No more. Thought I'd find more than that.

Now for the rest of the world. Four calls in paper tape format. Three pictures of computers, two of TTY machines, one delightfully homedrawn. One border saying RTTY RTTY RTTY etc., an antique telegraph setup, a 1900 TTY machine, and several of the BARTG 25th anniversary cards with TTYs. A few morse keys (5), one very striking TTY keyboard, and not least, one set of African drums.

Now I need to suggest to Jim, first this isn't enough, and I am as bad as any. We could get the message out in a small way, but we would need some designs. The commercial QSL card folks evidently won't, or at least haven't. Do we need to have a competition? Is there scope for an IDRA card, which would be DISTINCTIVELY DIGITAL?

73, Crawford WA3ZKZ

Digital Journal Dinner

(Sponsored by IDRA)

Dayton Hamvention
Saturday May 18, 1996

Regency Ballroom - Radisson Inn

Order tickets now for this dinner. This is the premiere dinner of the digital gang. Don't miss it. Ticket information and menu as follows:

Menu

Salad Bar
Chicken Marsala
Roast Beef au jus
Whipped Potatoes
Peas & Carrots
Bread, butter
Beverage
Dessert Table

Ticket Info

Wayne Matloch, WA6VZI
Rte 2 Box 102
Cibola, AZ 85328
Tel: (520) 857-1004

Make checks payable for
\$23.00 per dinner to Wayne.
Sorry no credit cards.

No-host bar 6:00 to 7:00 PM
Dinner served at 7:00 PM

Pactor-II

Impressions and Update Information one year after

By Dr. Tom Rink, DL2FAK & Dipl.-Ing. Martin Clas, DL1ZAM
Roentgenstrasse 36, D-63454 Hanau, Germany

I. Introduction

PACTOR-II was introduced together with the new multimode DSP controller PTC-II about one year ago. It includes several advantages that cannot be found in any other digital mode, such as a powerful convolutional code with a real Viterbi decoder to increase the robustness with weak signals, or a newly developed on-line data compression system (Pseudo-Markov Coding), which, along with the run-length encoding, roughly doubles the effective throughput. Therefore, the interest in the PTC-II units has always been tremendous, which caused the manufacturer to run out of stock several times. Up to now, more than 1000 modems are sold in all continents, about half of them in the commercial market, and the demand is still growing fast. Many tests have been performed by commercial customers, like relief organizations and even the military, using highly sophisticated equipment such as ionospheric simulators, to compare all available digital modes concerning bandwidth, speed and robustness. They, as well as the radio amateurs who tested it with real band conditions, clearly proved PACTOR-II to be the fastest and also the most robust digital narrow band mode for data transmission on short wave available at the moment. Information can still be transferred when a signal is 18 dB below the noise level. This, for example, allowed a QSO between Germany and a mobile Australian station with absolutely inaudible signals and only 16 mW of HF power. In good conditions, PACTOR-II easily exceeds an effective throughput of 1000 bits per second. The required signal bandwidth is just 450 Hz (at minus 50 dB), regardless of the actual modulation form and the transferred speed. Unlike other DPSK modes, PACTOR-II tolerates a high frequency offset when connecting and also a high frequency drift in an established link, as newly developed frequency and phase tracking algorithms are used, which still work in the above described borderline conditions. Initial frequency offsets of up to ± 80 Hz are automatically compensated by the PTC-II without the need of any user access. This process can be observed on the multi-color tuning display. For operating PACTOR-II, high tuning accuracy or frequency stability of the transceivers are hence not required. Detailed information on the technical basics, the PACTOR-II protocol and the PTC-II hardware can be found in a four part's series on PACTOR-II, which was published in the January to April 1995 issues of the Digital Journal.

The PTC-II is much more than just a multimode modem for data communication on short waves. It features the powerful processor MC68360 which also includes 4 SCC's implemented as a RISC system. Four different communication channels are thus simultaneously supported by the unit. The 60 MHz version of the special DSP 56156 is used for the HF port and also for many other tasks, such as audio processing, etc. The firmware is always being expanded in order to improve the system and to add new modes and functions. All new firmware releases are available for free, and can be downloaded from the SCS mailbox, which is available 24 hours a day at (+49)-6184-900427. Since the PTC-II came into the market about one year ago, many new features have been implemented, like a new and for DSP operation optimized CW-decoder, the above mentioned audio DSP filter, an automatic output power control in order to match the needs of the current link, and a complete remote control capability for Icom, Kenwood, SGC and Yaesu radios using the special transceiver control port. This last mentioned

feature, for example, allows one to scan pre-defined frequencies without the need of an external computer. All transceiver control commands as well as the required handshake procedures are automatically generated by the PTC-II. As the voltage levels are compatible in most cases, an additional interface between the PTC-II and the transceiver is usually not required.

A lot of new features will still be added this year, for example Packet Radio, a complete host mode and the support of additional modes, like FAX and SSTV. Explaining the details of all possible applications would surely exceed the range of this article, therefore we have to restrict to three of the novelties, which were already added last year: The audio processing function, the transceiver control option and the enhanced CW operation.

II. DSP Audio Filter Operation

Independent of its function as a DSP multimode controller, the PTC-II can be used for special processing and filtering of any audio signal. It is thus also a comfortable stand-alone DSP filter, suitable for SSB operation, CW listening, and many other tasks. The high processing power of the PTC-II has proven to be very advantageous for this audio filter function. In comparison with the usual simpler and cheaper DSP audio denoiser units, much more computing effort can be used to obtain an optimum result. The commands controlling the DSP audio filter function can be found in a special sub-menu called 'Audio'.

The AF signal is supplied to the PTC as usual via the HF radio connector, and thus no changes of wiring compared to the 'normal' RTTY/AMTOR/PACTOR operation is required. The processed and filtered AF is available at another pin of that connector and additionally at the Mini-DIN-connector (8-pin TRX-Remote-Control). All functions of the Audio sub-menu that evaluate the AF input signal, use a 4-stage signal level matching (22 dB control range) for the 16-Bit A/D converter, in order to keep the quantisation effect as low as possible and to allow a large effective dynamic range. The PTC-II therefore adjusts itself automatically to the average signal level delivered by the transceiver. The maximum level of the AF output signal is ± 500 mV. For the first test, a 600 Ohm earphone can be connected directly to either of the two AF outputs. Nevertheless, a small AF amplifier with volume control is recommended to be used, which enables comfortable speaker operation as well as the connection of any kind of earphones. Such a unit, which additionally provides remote controllable, bi-directional digital and analog user ports, will be available as an option later this year (see below). As the unregulated supply power of the PTC-II is also available at the Mini-DIN-connector, the unit can directly be connected there, and does not need any additional wiring.

Here is a short explanation of the most important commands of the Audio sub-menu. 'Notch' activates the automatic N-times notch filter. All systematic signals are heavily attenuated. The used algorithm leads to considerably less signal distortion of speech signals compared to simpler DSP notch filters. 'Peak' activates the automatic N-times peak filter. This may be considered as a phase-linear auto-correlation filter, of a very high order and large dynamic range. This filter enables slow CW-signals within the SSB bandwidth to be found that are BELOW

the level discernible by the human ear. The filter algorithm puts a very narrow band filter on all systematic signal components. Uncorrelated noise is heavily attenuated. The active mode is always displayed on the dot-matrix display of the unit as well as on the connected terminal. The command 'CWfilter', activates the CW filter, using a center frequency and bandwidth that can be freely defined. The filter is designed as FIR with a linear phase-change, so that even with a bandwidth of 30 Hz it does not ring. The transfer function is not designed for maximum slope steepness, but a shape leading to a signal easily readable for the human ear, and the best obtainable signal to noise ratio.

III. Transceiver Remote Control

The commands required for the transceiver control function can be found in the sub-menu 'TRX', which is entered using the 'TRX' command (without argument). This command may also contain an argument, where all applicable commands from the TRX-menu are allowed. In this case, the PTC will carry out the command without switching into the TRX sub-menu. The control commands can thus be considered to be 'fed through'.

Example: 'TRX Frequency 14079.0 <Enter>'

changes the frequency of a connected transceiver directly to 14079.0 kHz - without having to enter the TRX-menu. In the following, we introduce the most important commands of the TRX-menu:

The 'Channel' command allows up to 16 channels to be defined. Every channel consists of a channel number, its frequency (in kHz), the scan status and an optional short comment. Information on the current entries can be obtained using the 'List' command. Such a frequency list could look like the following example:

CHANNEL- LIST:	Ch	Frequency (kHz)	Scan	Comment
=====				
	1:	14079.000	YES	DL2FAK Main QRG on 20 m
	2:	14077.000	NO	Test QRG
	3:	3584.000	YES	DL2FAK on 80 m

The 'Channel' command (without argument) behaves similar to the List command. All user defined channels are listed. If the Channel command is followed by ONE argument, consisting of a number between 1 and 16, the PTC switches the connected transceiver to the frequency of the given channel. If, for instance, the command 'CH 3 <Enter>' is given, then (considering the above example) the transceiver would be switched to 3584.000 kHz. The definition of a channel is carried out by putting two or three arguments after the 'Channel' command.

Example: 'C 10 14076.5 EA5FIN STBY FREQUENCY <Enter>'

defines the frequency 14076.5 kHz as channel number 10, with the comment 'EA5FIN STBY FREQUENCY'. The comment does not contain essential information and may be omitted. The frequency input is always in kHz. The decimal point after the megahertz position is optionally allowed (e.g. '14.076.50'). The last decimal point is processed as a kilohertz decimal point. There are up to three positions allowed after this decimal point. A frequency accuracy of 1 Hz is thus anticipated, which, however, is not supported by some transceivers. The frequency input 0 kHz erases the channel from the frequency list.

The 'Type' command is used to set the transceiver type for the configuration of the PTC-II interface. There are up to three arguments allowed. The first one defines the transceiver (currently Icom, Kenwood, SGC and Yaesu, but this list will be extended). The second value is the baud rate. When using Icom equipment, the PTC requires a number as the third argument (maximum 2 figures) that represents the transceiver

address number. With Kenwood and Yaesu equipment, the third argument is the VFO number (A or B) that should be addressed by the PTC. The 'Scan' command has two different functions: An argument 1 or 0 switches the scanner on and off, respectively. It is thus the 'main switch' of the scanner. If, as argument, the word 'Channel' (minimum abbreviation: 'C') follows, a channel number of the frequency list can be entered to toggle the scan status between 'YES' and 'NO' for the respective channel. This feature hence allows a channel to be scanned or skipped. The 'DWell' command sets the dwell time of the PTC scanner on each channel in 100-ms steps. A dwell time of 30, for example, means that the scanner will pause on each channel for exactly 3 seconds. The 'Wait' command defines the time (in seconds) that the scanner waits at the respective channel after a disconnect occurred before the scanner starts again. The 'Offset' command applies a frequency offset to EVERY channel of the channel list before it is sent to the transceiver. The valid range is -5.000 to +5.000 kHz. This allows the FACTOR mark frequency to be entered, even whilst in SSB mode. If, for instance, low-tones are used (1200/1400 Hz) and USB position, the transceiver is set on 14077.60 kHz in order to transmit the mark frequency of 14079.00 kHz. As the transceiver displays the frequency of the (imaginary) carrier, the frequency of the audio-mark-tone (1400 Hz) must be added to the carrier frequency in USB, to get the actual mark frequency. If, on the other hand, any mark frequency is taken from a BBS list, the mark tone frequency must be subtracted in order to find the correct frequency to tune the SSB transceiver to. If the offset value is defined as -1.4 kHz, the PTC-II carries out the required frequency correction for the mark frequency automatically. It is thus only necessary to enter the desired mark frequency, and the correct offset is automatically applied. With regard to the first above mentioned example, one can give the command 'F 14079.0 <Enter>'. The PTC-II then switches the transceiver to 14077.6 kHz, which automatically leads to the required transmit and receive mark frequency of 14079.0 kHz.

The 'Down' and 'Up' commands allow the microphone down or up key to be activated (simulated by an FET switch), which is connected to the corresponding pin of the HF transceiver socket. This way it is possible to adjust the frequency without accessing the serial interface. As argument following the command, a number between 1 and 60000 is entered. This represents the number of key pulses initiated by the PTC-II. With no argument, a single pulse is given. 'Ptime' sets the time (in milliseconds) for these up and down keying pulses. For example, a Ptime-value of 50 means that the respective switch in the PTC-II is closed and opened for 50 ms per pulse.

The commands 'Dump' and 'Transfer' are used to send an ASCII string or HEX dump to the transceiver. This way, any command or remote control string supported by the transceiver can be passed through the PTC-II, for example from an external control software.

A description of the full TRX command set as well as more details on the above mentioned commands can be found in the update information file, which is available at the SCS phone mailbox or in the Packet Radio and FACTOR network.

IV. Improved CW Operation

The CW routine is implemented using a highly sophisticated DSP technique. The demodulator utilizes the much talked about technique of the auto-correlation filter in the Audio menu (see above). This enables even weak signals to be reliably detected without any tuning problems. (An ideal filter for a CW signal with a speed of 60 cpm exhibits a 0/0 bandwidth of only 20 Hz that - with conventional methods - requires extremely exact and stable tuning for good results.) The auto-correlation method is also the basis of the AGC used in the CW demodulator, with a dynamic range of approximately 40 dB. The AGC allows a constantly good receive performance, independent of the audio input signal level.

For easy and fast accessing operation, the CW terminal offers the use of a number of so-called hotkeys: Pressing the Break-In key twice switches between direct transmission of the keyboard input (immediate transmission mode), and a delayed switch over (delayed transmission mode). This delayed switching allows text to be 'typed ahead' whilst reading the other QSO partner's transmission. The text in the buffer can then be transmitted by pressing the Break-In-Character once. The transmission is then only blocked again when no characters are transmitted for 6 seconds. This way, the user may continue to write after the buffered text is sent, without having to press any other key. The renewed blocking of the transmitted text (it is then being redirected into the buffer instead of being immediately transmitted) is shown by the PTC with the message ">>>" written into the Echo-Window. After switching to the CW terminal, one is always in the direct transmission mode, and the automatic speed adjustment mode is activated. '<CTRL-F>' switches between automatic and manual RX speed adjustment (fixed speed mode). On switching between these two possibilities, the present speed is taken without change. Thus the automatic adjustment can be left on for a while to detect the correct speed, then '<CTRL-F>' can be pressed to keep this setting. '<CTRL-U>' ('Up') increases and '<CTRL-D>' ('Down') decreases the decoder speed by 1/16 of the actual value. This is important when the automatic RX speed adjustment is turned off. The operation with a fixed speed has definite advantages in weak signals and in signals with heavy fading. The decoder withstands speed errors of 40 percent without any problem. Hence even with a fixed speed setting, virtually no reading errors are found. The CW speed, regardless of whether it was automatically detected or manually set, is shown at the dot-matrix-display.

V. A Look to the Future

Packet Radio and the host mode are certainly the next features to be added to the PTC-II. For the Ham Radio exhibition in Friedrichshafen/Germany, which takes place in June this year, the 1200/2400 Baud as well as the 9600 Baud plug-in modems are planned to be available, together with the corresponding firmware update. At the same time, the above mentioned Remote-Control-Amplifier-Unit (RCU) for the PTC-II will be available. This small box is connected to the PTC-II using the 8-pin Mini-DIN connector. It has two major features: At first, it provides an 8 W audio-amplifier with volume control, speaker and headphone connector to support and simplify the audio denoiser operation with the PTC-II. As a second feature, it provides a mixed-mode user-port interface to the PTC-II, accessible from the local terminal as well as from each communication channel (HF or Packet). It consists of eight digital inputs, eight digital outputs, eight analog inputs and eight analog outputs. Connected to any imaginable application, remote-control or remote data acquisition is possible using a subset of user-friendly commands. A detailed description of the RCU will be published separately.

(Note: please see the editorial comment regarding Factor-II in the Last Word column—de N2HOS)



DX News

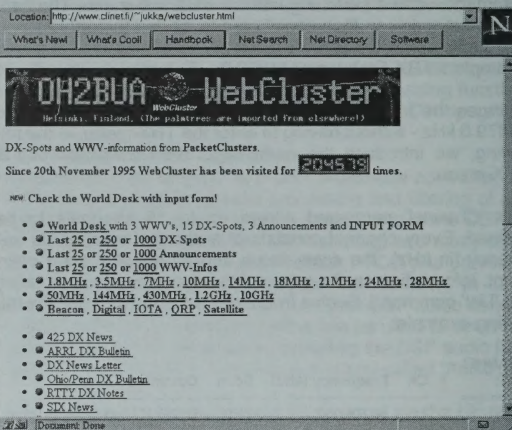
The latest digi-doings from around the globe

by Don Hill, AA5AU PO Box 625, Belle Chasse, LA. 70037

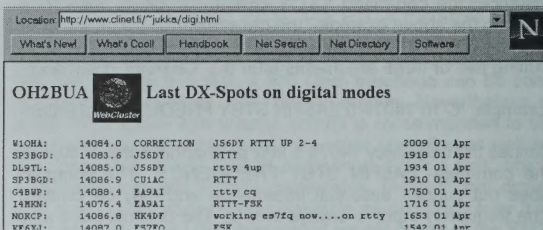
email: AA5AU@aol.com

RTTY DXing and the Internet

The Internet is arguably the largest phenomenon to hit mankind this decade. Not only does the Internet have similarities with Amateur Radio, it has become an essence of ham radio activity worldwide. The easiest access to the Internet is E-mail. With E-mail, you can not only communicate directly with other hams, you can subscribe to so called "reflectors". With "reflectors" you can learn about up-to-date events about your particular interest, and in our case, Digital DX'ing.



I'm not sure where the term "reflector" comes from, but the concept is to send a message in E-mail form to a central location and have that host computer "reflect" the message to all of those that subscribe to that particular "reflector". It seems complicated, but it's not.



The two most popular "reflectors" are Digital DX and WF1B for our mode. There are several other DX related reflectors. Subscribing is not difficult, but the way in which you subscribe must be performed in a certain manner needed by each reflector's software.

(Note: The two screen prints included with this article were taken from the OH2BUA Cluster site on the Internet. The address <<http://www.clinet.fi/~jukka/webcluster.html>>. This is a remarkable facility. A click of a button can get you everything from the 'World Desk' (3 WWW's, 15 DX spots and 3 announcements) to the 'most recent 1000 spots.' This site has been accessed over 230,000 times since November 1995! Yes, there is a digital list as well.—de N2HOS).

If you are new to the Internet and want to see what these reflectors are about, I suggest you send an E-mail to Yukio, JE2ERH, je2erh@ask.or.jp for info on the Digital DX reflector. An e-mail to Ray, WF1B, wf1b@ids.net will help get you set up on his reflector. You can check out his home page at <http://ids.net/~wf1b/home.html>. Ray's forum is dedicated to his RTTY contest software, but also is an excellent source for DX related news as well. JE2ERH also has a page on the World Wide Web that allows Internet users to subscribe to his forum. His URL address is <http://www.ask.or.jp/~je2erh/>. Next month I hope to write more about the World Wide Web.

The Internet has helped elevate RTTY DX'ing into a prominent ham radio sport. Activities occurring this year have supported this claim. In mid-March, Randy, WX5L, expanded on an E-mail sent by Per, LA7DFA, to a DX reflector regarding an impending work related trip to Jan Mayen (JX). JX is ranked high on the needed list.

Randy was able to get in direct E-mail contact with Per and graciously requested RTTY operation. Per responded that he was familiar with RTTY and would be happy to try. Per will be on Jan Mayen from April until mid-October. Per told Randy of the difficulties of working North America because the mountains to the west of the main site, and that there was an amplifier on the island that needed a new set of 572B's. Randy promptly shot an E-mail to the Digital DX reflector requesting help in getting these tubes to Per. There was a great response. Several digital operators contributed to the effort and a brand new matched set of tubes were shipped to Per in Norway prior to his departure to JX.

Market Reef Calling

Also in March, an E-mail was sent to one of the reflectors by Hans, OH2BDP, that there would be a DXpedition to Market Reef (QJ0) on SSB/CW only. An E-mail request to Tapani OH2LU, in an attempt to get RTTY included for this operation yielded this response from Hans "Initial plans called for CW/SSB only. After numerous requests by monitors of this reflector and otherwise, for RTTY, I'm happy to report that as a result of some gentle persuasion they will carry along the necessary stuff for RTTY as well. (Never having operated RTTY before, OH2KI had to take a crash course on the subject, hi)". Jukka, OH2GI, also helped initiate this effort.

On March 23 at around 1310z, QJ0/OH1VR came up on RTTY for the very first time. They were inverted but had a good signal. They had trouble receiving, so they went back to CW while Jorma, OH2KI, worked with Tapani over 80 meter phone to figure out the problem. At 1500z I received a phone call from Tapani saying they were still having receive problems but to keep trying to make contact with them.

At 1520z I received another phone call. "Hello this is Market Reef calling" said the voice over my computer phone. I couldn't believe my ears. It was Jorma calling from his cell phone. He explained what problems they were having and we did some testing over the air while we talked on the phone. I could tell from Jorma's tone of voice that they were determined to make some RTTY contacts. Not wanting to escalate the cost of the phone call, we decided that I would just keep calling them until they could copy me. After calling for several minutes, I decided to take a break. By then there were several others calling as well. I waited and watched. Around 1600z, they were calling CQ right side up working split. Even though they only made a handful of contacts, they should be commended for their determination. OH1VR was scheduled to return to Market Reef in April.

The guys on the reef did something that is unheard of for us RTTY DX'ers. They took valuable time out of their short two day DXpedition to include a mode they had never operated. More lessons from Tapani and Jukka and maybe Seppo and Jorma will become avid RTTY operators from QJ0 in the future. A big thanks goes out to everyone involved in this operation. Great job guys!

XZ1N Postponed

The situation in Myanmar has worsened for Amateur Radio. The XZ1N DXpedition by the Central Arizona DX Association (CADXA) has been delayed for the same reason an earlier XZ1R operation was canceled as related in this column last month. Yet the CADXA is still confident that things will work out for the better and the operation will be rescheduled.

I received a phone call from long time RTTY DX'er Carl, K6WZ. It appears I caused a small stir with my comments about Romeo Stepanenko in the February issue concerning his Myanmar (XY0RR) trip a few years ago. I want to clear up that even though the ARRL has disqualified Romeo from the DXCC program, his QSL cards for Myanmar will remain good for DXCC awards.

BV9P on RTTY

After the results of the *Most Needed Countries List* were published, I put the top 25 positions out on the various reflectors and added Pratas Island (BV9P) and Scarborough Reef (BS7H) at the top of the list with North Korea (P5) since I had not received any notice of either DXpedition having RTTY. Junichi, JH4RHF, posted this response: "Oh, boy. I played some RTTY at last BV9P operation, as first RTTY operation there. I managed some 450Q's, include some US, abt 200 EU's and 200 JA's." There you have it, straight off the Internet.

Digital Doings

ASIATIC RUSSIA, UA9.0. Mike, UA0SMF in CQ Zone 18, can be found around 0030z on 20 meters. QSL via DL5OV. Valery, UA0JV, is keeping Zone 19 active. QSL direct: Valery Chikunov, Box 1, 676505 Belogorsk, Russia.

BOLIVIA, CP. CP1PY can be found on 20 meters around 2000z. QSL to Box 1763, La Paz, Bolivia.

CROZET ISLAND, FT5W. FT5WF was active in early March but the RTTY activity curtailed quickly. After spending a couple of days working Japan and west coast USA on 40 meter RTTY, the activity was focused more on FT5WE working CW.

GAMBIA, C5. The C56CW DXpedition came up on 20 meter RTTY in March. They were very active in the BARTG contest. QSL via DL7DF at: Siegfried Presch, Wilhelmsmuehlenweg 123, D-12621 Berlin, Germany.

GUANTANAMO BAY, KG4. Bill, KQ4GC, signed KG4GC from this US Base in Cuba. Bill states that he had a great time on RTTY. QSL's go to his home call address: Bill Gallier, 4094 Sandy Run Dr, Middleburg, FL 32068, USA.

MOZAMBIQUE, C9. C94AI was active in March. QSL via CT1CKP at: Rua A B 4 D-4, P-2745 Queluz, Portugal.

SABLE ISLAND, CY0. There is a full-scale DXpedition scheduled between June 18 and July 2 using the call CY0AA. RTTY is scheduled to be included.

SAINT MARTIN, FS. Chad, as FS/WE9V, put on a great show from this Caribbean location in March. Unfortunately band conditions were tough going. Although Chad did make over 300 RTTY contacts, he logged only six JA stations showing how difficult it is for Japan to work that part of the world. QSL direct to: Chad Kurszewski, 33149 N. Hwy 45, Wildwood, IL 60030, USA.

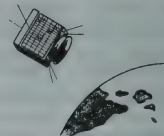
UNITED ARAB EMIRATES, A6. Don, WB2DND/A61AD, E-mailed that he was surprised to see A6 in the top 20 needed on RTTY. He stated that when he was there last year, many of his CQ's went unanswered. Don will return to A6 this fall and will again be QRV on RTTY. Stay tuned for the details.

Remember, DX never sleeps. 73 de Don, AA5AU.

Digital Satellites

How to work 'em and more out of this world info

By David Medley K16QE/VK2IMJ • 1020 West Oleta Drive • Tucson, AZ 85704
CIS 74072, 1261 / Internet: dmedley@indirect.com



AMSAT OSCAR-13 - RE-ENTRY

Sometime towards the end of this year it is predicted that AMSAT OSCAR-13 will re-enter the earth's atmosphere and burn up. This is unfortunate as this satellite has provided a wonderful service to the Amateur Community for many years. This was brought about by it not achieving an optimal orbit after launch and there has been a continuing debate among the experts as to exactly when this sad event will occur. At the time of writing the general consensus is that it will occur just before Christmas 1996.

The replacement Phase 3D satellite will hopefully be launched before this time but there is some uncertainty about this also. The first test of the new Ariane Launcher which will carry Phase 3D will take place shortly and we are all hoping that it will be successful. This will be the largest launch vehicle built so far by the European Space Agency.

One of the interesting things we can do during the coming months is to monitor the telemetry from AO-13 and watch the gradual deterioration of the orbit. This telemetry is transmitted by two beacons carried on the satellite. The general beacon operates on 145.812 MHz and the more powerful Engineering Beacon on 145.985. This latter beacon operates from mean anomaly zero to 40 while the general beacon is on for the balance of the time. Mean Anomaly is a modulo 256 orbital "clock" that indicates where the spacecraft is in its orbital plane. An MA value of 0 indicates the spacecraft is located at perigee (closest point to the earth). An MA of 128 indicates the spacecraft is at apogee, its farthest point from the earth's surface. In a future article I will explain in more detail what these "Keplerian Elements" mean.

These beacon transmissions operate on a definite schedule carrying telemetry and news items using CW, RTTY and ASCII formats. CW is sent on the hour and half hour at 12wpm. RTTY is sent on 15 and 45 minutes past the hour at 60 wpm using 170 Hertz shift and ASCII at all other times at 400 bps using binary phase shift keying (BPSK).

Here is the schedule for AO-13 for the period April 2 to June 10, 1996:

Mode-B :	MA	0 to MA	70	
Mode-BS :	MA	70 to MA	110	Omni antennas : MA 230 to MA 25
Mode-S :	MA	110 to MA	112	S Beacon (2400.664) only
Mode-S :	MA	112 to MA	135	S transponder, B transponder is OFF
Mode-S :	MA	135 to MA	140	S Beacon only
Mode-BS :	MA	140 to MA	180	
Mode-B :	MA	180 to MA	256	

Bahn Longitude 180
Bahn Latitude 0

These Bahn co-ordinates are used by your tracking program to calculate the pointing angle of the spacecraft's antenna with respect to the earth. When the satellite is using directional antennas the lower the pointing angle the louder the signal should be.

You should have no trouble copying the CW and RTTY transmissions using your multimode radio and whatever RTTY equipment you use for terrestrial communications. The BPSK transmissions need some special hardware. Today the best way to go about this is with a Digital Signal Processor (DSP)

and both the units marketed by TAPR and AEA have the appropriate software modems included. A standalone modem by G3RUH is also used by many amateurs. These BPSK transmissions contain the bulk of the telemetry and are very interesting to watch. The raw data can be analyzed and displayed using a software package called P3C which is available from AMSAT.

Here is some samples of what you can see from the transmissions analyzed by P3C:

```
AMSAT Oscar 13 Telemetry Decoder V2.0

=====Message Block=====
MODEM OFF || K QST de G3RUH 1995 Dec 15 ||
Id: Q || AO-13 Information Archives ||
|| || ||
#recs. 53 || Full information about AO-13 is available via the Internet by ||
|| #bytes N/A || ftp://ftp.amsat.org/amsat/satinfo/ao13 ||
|| || The files are: ||
Data from: || schedule.doc Current AO-13 transponder schedule ||
SUNDAY.DAT || ao13keps.doc Current smoothed Keplerian elements More>> ||

=====Temperature Data=====
Q HI THIS IS AMSAT OSCAR 13 17:47:58 6629 ||
#0066 #0029 #0590 64 2 0 1 21 234 1 ||

Arm 1 Arm 2 Arm 3 Central ||
P1 : 7.0 P3 : 4.7 P5 : 5.8 N204 : 16.4 ||
Rx : 25.7 SEU : 16.4 Helium : 2.3 AZ50 : 19.3 ||
Wall : 15.8 Wall : 8.2 RUDAK : 11.1 ||
Top : 2.3 Sensor : -1.2 IHU : 12.9 ||
Bottom : 28.1 BCR : 19.9 Nu-Damp : 11.7 ||
Tx : 21.1 A-Bat 11.7 M-Bat 17.5 ||
```

```
AMSAT Oscar 13 Telemetry Decoder V2.0

=====Message Block=====
MODEM OFF || L decaykep.zip 200 AO-13 future 2-line keps up to re-entry ||
Id: Q || mmplot.zip Mean Motion predicted and actual history. Pics ||
|| || spec_tlm.doc Full AO-13 telemetry specification & RF format ||
#recs. 55 || spec_wod.doc Format of whole orbit dump K and L blocks ||
|| #bytes N/A || ftp://ftp.amsat.org/amsat/satinfo/ao13 ||
|| || events.doc Explanation of Event flags ||
Data from: || demod.zip MK II Decoder spec, sources, M.1 mods. Pics ||
SUNDAY.DAT || telemetry Sub-directory telemetry archives ||

=====S Transponder Data=====
Q HI THIS IS AMSAT OSCAR 13 17:48:25 6629 ||
#0066 #0029 #0590 64 2 0 1 21 234 1 ||

=====Squelch Status=====
Orbit No : 5898 S-Xpndr : OFF Defeated : NO Temperature : 4.7 ||
MA : 29 S-Beacon : OFF Sensitivity : LO ||
|| Open : NO ||
|| Xpnd 1 mA : 1868.8 ||
|| Xpnd V V : 14.6 ||
```

Coherent CW - Another Digital Mode

CCW -- 35Khz up on all bands

by Peter Lumb, G3IRM

2 Briarwood Ave • Bury St. Edmunds, Suffolk • UK IP33 3QF



*** CCW—35 khz up on all bands— plus/minus 1khz ***

Operating schedules:

VE3RAT - Low power beacon believed to operate continuously on 18.101
G3IRM - Tuesdays at 1900z on 10135 - Thursdays at 1900z on 7035 -
Saturdays and Sundays at 1900z on 14035.

VE3OXX - Sundays at 2000z on 7033

W6HDO - Thursdays at 0500z on 7035 and at 1830z on 14035.

W6HDO or WB6RIJ on Saturdays and Sundays at 1900z on 14035.

Once again there is nothing to report in the way of activity. I have not heard any coherent signals and have had no replies to my calls. I did have a letter from G3WKL asking for details and I sent him a copy of PCW together with my usual explanations. He seems to be interested but so far I have heard nothing further. G3FMW is still struggling along with his hardware system.

However, I can at least report a satisfactory conclusion to my laptop problems. The company's UK manager has been touring his various dealers and was in Ipswich recently. The dealer took the opportunity to inform him that, unless something was done about my computer in the very near future, his accounts would not be paid and consideration of the termination of the dealership would have to be considered. That was the answer. Within a couple of days I had a telephone call to say that the machine would be replaced and, as some form of compensation, they would supply me with a Pentium model at no extra cost. I took the opportunity to press for a larger hard disk and more memory and managed to get these added at half price. The moral is - always get on friendly terms with your dealer - he (or she, in my case) has more influence than you do. I tried for nearly a year to get a replacement and the dealer did it in two days!

Morse recognition

So this month let me tell you about an interesting booklet I received some time ago from SM7CMY to whom I express my thanks. It is written by Peter Montnemery of Lund University in Sweden and is doctoral dissertation entitled Signal Detection in Noise. I cannot go into all the details but will try to summarize the more important points. Some early research found that a larger signal to noise ratio was required for detection at low noise levels when compared with high noise levels. Detection of short tones was also known to be influenced by the overall noise level. When a listener tries to detect a tone masked by wideband noise he takes advantage of some sort of auditory filter which passes the tone and all noise in a narrow band around it but reduces noise outside the filter bandwidth. These statements were checked and confirmed.

The paper then goes on to describe the Morse code and mentions various electronic systems for decoding Morse. He did not try Coherent or PCW! The devices he used are described and compared later in the paper. Investigations have been carried out into learning the code and it has been found that, after about 100 hours of learning, a person is able to detect between 40 and 90 signs/minute. Ten Morse operators ranging in age from 21 to 60 were tested at various speeds and with different signal/noise ratios. Various recep-

tion frequencies were used in both narrow and broad band noise. The main conclusions were that recognition of telegraphy masked by a narrow band noise improved when the speed was reduced in four steps from 103 to 25 signs/minute. Reducing this further to 13 signs/minute showed no general improvement. From the graphs plotted it was seen that when the speed is reduced by a factor of two the signal/noise ratio can be reduced with 1-2 db with a maintained level of 50% recognition. The most comfortable listening level varied between 38 and 98 db sound pressure level. Recognition in narrow band noise is improved at lower speeds and best recognition is obtained at 25 signs/minute with 100% recognition at +1 db signal/noise ratio and 50% recognition at -1 db signal/noise ratio.

Automatic Morse reception

Six different commercially available Morse decoders were tested. With narrow band masking noise with a bandwidth of 185 hz a signal/noise ratio varying from +8 to +12 db was required for 100% recognition at 80 signs/minute and of +8 to +11 db respectively at 150 signs/minute. With broadband masking noise (100 - 2500 hz) ratios required for 100 % recognition varied from -4 to +3 db at 80 signs/minute and from -3 to +4 db at 150 signs/minute. These are considerably worse than the results obtained by average human operators at low signal/noise ratios and low to moderate speeds.

Some other conclusions

At a pulse duration shorter than approximately 1000 ms the duration of the tone pulse affects the detection. This is because the ear integrates energy over a period of time. A tone pulse with a longer duration is easier to detect than a pulse of shorter duration. This means that there is a linear relation between the logarithm of the pulse duration and threshold for pulses shorter than 200 ms. Above a pulse duration of 200 ms the change in hearing thresholds successively becomes smaller and the effect of integration in the brain can be neglected at pulse durations exceeding approximately 1000 ms. The frequency of the tone also affects detection. Using a high frequency tone requires a higher signal to noise ratio to be detected than when using a low frequency tone.

Bury Saint Edmunds

I have often been asked about the rather unusual name of the town in which I live so perhaps an explanation may interest you. Bury is Anglo-Saxon for borough and, if the apostrophe (which is usually omitted) is inserted and the words rearranged, we get St. Edmund's borough which is much more understandable. St. Edmund was the boy king of East Anglia and was murdered in 869 by the Danish invaders when he refused to relinquish his Christian faith. The body was recovered (it is said to have been found guarded by a wolf) and buried in a small wooden chapel in the town. Later a large monastery developed which was the largest in the UK and probably the largest in Europe. The town was renamed from its earlier name of Beodrickswoth. Like all the other great abbeys in England ours was destroyed during the reign of Henry VIII and only parts now remain. However, two towers and two of the churches which were part of the abbey are intact and one is now a cathedral.

The International Scene

A regular look at the odds & ends from around the digital globe

Edited by Jim Mortensen, N2HOS



ZS1/ZS1/ZS1/ZS1

One man's thoughts. Henry ZS1AAZ writes via Internet: "Hallo, this is ZA1AAZ from South Africa. Clover signals are few down here. As far as I know, the only Clover users in SA are ZS1AK and V51C, using P38's and ZS6UP and ZS5S using PC14000's. If the P38 could also do HF packet, a lot more would sell here. I know what HAL won't bother to do packet, but all the same, it would make the P38 more popular. Most people here cannot afford two multimode data controllers if they want to do HF packet. It would be nice if someone wrote a software package for the P38 to do some spectral analysis. Then you could check your friend's signals to see if they are clean."

Needless to say, the mere mention of HF packet will start a discussion. Anybody want to join in?

RW1/RW1/RW1/RW1

New member Sergey RW1AF writes that "the poorest days of winter-time, propagation and my super high blood pressures (both actions are sun related) clearly coincided with me becoming the very first Clover operation in the great Russia (according to Elmer notations and statistical analysis of DJ1IJ. Am on clover mostly Sundays around 1200Z, 14065, 14065.5 and 14066.

IO10/IO10

What's left? Jules, W2JGR wrote correct a misstatement in his February DX NEWS column in his reference to WAS RTTY certificates. Several wrote him that they had received such certificates from the ARRL without any problem. His says his specific reference to such a supposed difficulty by IOAOF was wrong.

During a QSO with IOAOF, while he was operating OH2/W2JGR, Jules asked Joe to send him a list of all his RTTY awards. Among those listed was WAS RTTY (20 meters) No. 42.

Joe's RTTY awards must fill a wall. They include:

From CQ Magazine:

RTTY USA-CA No. 1899 (first RTTY)

RTTY-WAZ No. 19

RTTY-CQDX No. 13

From ARRL:

RTTY-DXCC No. 24

RTTY-WAS No. 42

RTTY-DX Golden Jubilee (1937-1987)

From 73 Magazine:

RTTY-WTW Africa No. 215

RTTY-WTW S. Amer. No. 251

RTTY-WTW Europe No. 325

RTTY-WTW Asia No. 193

RTTY-WTW N. Amer. No. 276

RTTY-WTW Oceania No. 203

RTTY DX Dynasty No. 90

RTTY-DX World Capitals No. 48

RTTY Century City (double WAS) No. 58

RTTY Special Achievement Award No. 4

Misc:

BARTG RTTY Quarter Century Award No. 292

WorldRadio: RTTY—100 Nations Award No. 1

DARC: RTTY EURO-TROPHY No. 6
Amateur Achievement Co. Award (WV2B)
for 571 RTTY USA Prefixes No. 14

Oh yes, Joe's DXCC score is 310 countries!

JA3/JA3/JA3/JA3

Tom JA3BR sysop of Ham Park <tomando@mb.infoweb.or.jp>, proposes a most interesting solution to QSL-ing. He and other JA's feel that the time has come to begin a Cyber QSL Service. Their proposal states that it is technically feasible and that there is no reason not to begin a test.

An exciting proposal, that. It reminds me of a trip to ARRL headquarters several years ago. A friend and I took up a batch of QSL cards to get in before some deadline or other. I took a very special card along with me, not to be counted, but for 'discussion purposes only.' You see, at that time SU1ER (if memory serves) automatically transmitted a neat QSL card to every first timer into his Amtor BBS. He sent it to my screen, I printed it and took it to Newington.

"Does this count," I asked (before I handed in the stack of cards, which included a regular SU RTTY contact)? "No," I was assured and was then asked "Can I keep this card?" I never did find out why he wanted to keep it, but I always assumed that someone had gotten credit for the SU contact with this first-ever electronic QSL card. I also assumed that I could easily have passed off the card as genuine had I printed it on card stock instead of regular printer paper. Hi! There was, at that time, no further discussion of Cyber-QSL-ing! Hi!

But times have changed. We live in an era when virtually any kind of transaction can be made via electronic means, from the multi-billion dollar stock transaction to the \$15 book purchase from an Internet book store. Encrypted signatures transmitted electronically are now legal and today's encryption safely secures almost any kind of document that comes to mind. So, I think the JA's have it right. And I hope the IDRA Board of Directors will discuss and approve their proposal at the Dayton meeting. You will hear more about this one.

Please let the world know how you feel about the subject.

You can see the full proposal at

<<http://www.hotline.co.jp/~tomando/kime500.html>>.

BARTG/BARTG/BARTG

New National Prefixes for the UK. From 1st April 1996, all new callsigns issued by the Radiocommunication Agency (RA), will use the "M" prefix letter in place of the "G" prefix letter. All existing UK callsigns will remain unaltered. The second prefix letter denoting national location will remain the same, i.e. Isle of Man (MD), Northern Ireland (MI), Jersey (MJ), Scotland (MM), Guernsey and Dep. (MU), Wales/

As a reminder. The news is put into the BARTG Web site: <<http://cs.nott.ac.uk/~ibx/BARTG/>>. The BARTG web site is maintained by Ian G4EAN <ibx@c.nott.ac.uk>.

BARTG 1996 CONTEST

High Claimed Scores

by WA4ZXA

CALL	HRS	SCORE	Q'S	DIST	DX	CONT
------	-----	-------	-----	------	----	------

SO/AB

AB5KD	30	640,560	788	58	78	6
SM5FUG	30	405,384	509	22	111	6
IK0HBN		328,032	410	30	104	6
OH2LU		283,866	391	15	106	6
N1RCT	30	272,500	500	40	69	5
OH2GI		270,108	36	16	107	6
K0RC	25	262,398	438	44	57	6
PA3ERC		233,508	319	22	100	6
KD8FS		187,500	385	47	53	5
N9CKC	27	180,864	314	41	55	6
N0AB	20	148,680	299	40	44	6
W6/G0AZT		128,982	261	45	38	6
PA3EWP		128,898	217	25	74	6
DL2FAG	21	122,500	250	15	83	5
WA4VQD	12	108,790	257	43	43	5
KE7GH		94,720	298	40	24	5
W7LZP	15	86,028	215	35	32	6
VE2AXO		68,625	184	34	41	5
VO1HP		51,584	208	20	42	4
N0LEF		51,520	162	37	27	5
WA4ZXA	16	46,150	142	31	34	5
N9ITX/7	7	43,792	161	32	36	4
AA7EA		41,040	120	36	21	6
VE3XAG		39,600	132	31	29	5
N6GG		37,260	139	31	23	5
KA4RRU		34,080	142	25	35	4
KI4MI		33,900	113	25	35	5
VE6FR		26,460	90	28	21	6
K9RRB		21,840	106	22	30	4
KL7DN/W1		19,440	82	18	30	5
OI3LOK		16,350	109	3	47	3
N5MTS		15,688	108	25	12	4
OI3MFP		14,840	140	0	53	2
VE6RAJ		10,416	84	21	10	4

SO/Single Band

40M

NF6L		48,090	233	19	16	6
KQ4QM		35,335	191	18	19	5
WF1B		34,850	170	17	24	5
N2HOS		2214	44	10	8	3

20M

I2EOW		219,336	488	18	58	6
SM3KOR		180,144	419	18	54	6
S59A		162,732	382	20	51	6
WY2E	21	62,964	198	13	40	6
OI3MMF		13,824	72	4	28	6
W2JGR		297	11	6	6	3

Mult/OP

WB8YTZ (+ WB8YJF)		418,872	563	45	79	6
VE6KRR		185,976	378	40	42	6
AE0Q		99,450	261	38	27	6
AA5AU		63,294	137	35	42	6
WA4ZXA	16	46,150	142	31	34	5

Gone To Dayton

by Dale Sinner, W6IWO

1904 Carolton Lane • Fallbrook, CA 92028

Tel/Fax: 619-723-3838 / CIS: 73074,435

By the time you read this article I may just be in Dayton. It all depends on how long it takes before the Digital Journal is in your hands. Anyway, I can't believe it. It's here already! Maybe your dream is coming true and you'll be there, too. The way things are lining up we are going to have a fantastic time digitally speaking. I hope you are planning to attend all the events.

Starting off, we gather any time after 5PM on Thursday in the hotel lounge. That may seem like the real meeting, but the Official IDRA Membership General Meeting takes place on Friday morning. Be sure and get up early that morning and get the Hospitality Suite by 0830. (That is meeting room Jade II). After a get-acquainted session of about thirty minutes or so, the General Meeting will take place.

The actual agenda is limited to three items: 1) election of directors 2) treasurer's report and 3) all other business. Under the category of 'all-other business' there will be ample time for progress reports from the different Directors and plenty of discussion. President of IDRA Paul Richter W4ZB will chair the meeting. All Directors (Joel KI4T, Jules W2JGR, Barry VE3CDX, Peter TY1PS, Al W2TKU and Jim N2HOS) and the two proposed Directors (Ron AB5KD and Glenn W6OTC) will be in attendance. Be there to vote (or send in your proxy—see inside front cover).

After the business session is over, we go into an active schedule of seminars. We have three big subjects to cover before the first bus leaves for Hara Arena. The tentative lineup:

Software free-for all

Peter TY1PS—Express 3.6
Ray WF1B—RTTY contest software
Paul W4ZB—precision HF tuning demo
Jules W2JGR—preview of OH2GI's product

The Internet free-for-all

TV demo and discussion

Contesting and DXing free-for-all

Ron AB5KD
Glenn W6OTC
Jules W2JGR
Don AA5AU

As you can see, we have ample talent for a range of interesting subjects. As always, the morning will not allow enough time to cover everything in adequate depth. But the talks can continue at the IDRA Booth (#141, and at the same location as last year) or in the hospitality suite Friday or Saturday nights. And, of course, you will have many opportunities to corner any of the individuals involved if you wish a private chat. Don't miss this opportunity to hear it from the experts.

Friday Evening: The Contesters and DXers dinner at the Radisson—sponsored by the IDRA. Your emcee will be Ray WF1B. Speakers will be Rick Davenport KI1G, Jay Terieski WX0B and the featured speaker will be the famous Tony Deprato WA4LQS. WPX awards will also be presented.

For those attending the dinner, note that the hospitality suite opens at 7:00PM until? in Jade II at the Radisson.

Saturday Morning: The Digital Journal Forum at Hara Arena at 11:15 to 12:45 in room 5. Doug Hall KF4KL of JPS (makers of dsp filter products) will take the mystery out of dsp. This should be very

enlightening. Then Bill Henry K9GWT will talk on the history of demodulators (tubes to dsp). Be There!

Saturday Evening: The Digital dinner at the Radisson. I will emcee this dinner which will include some announcements by Paul Richter W4ZB and the featured speaker, Glenn Vinson W6OTC. Glenn is a well traveled DXer for sure.

After dinner, the hospitality room opens again—approximately 9:00PM until??

That concludes the Hamvention agenda for us digital types.

At present there are a few rooms left, so if you still want to go, check with me now for availability. Those of you who are going—do you have Friday and Saturday dinner tickets yet? If not be sure to send your money to Ron Stailey or Wayne Matlock (see ads elsewhere in this issue). You don't want to miss out on these fine dinners. The hotel never ceases to amaze us with their outstanding cuisine. We all have to eat someplace and the hotel is a very good place to dine. They do a lot to make our stay enjoyable. Just one example of their hospitality—they provide us with the hospitality suite at no charge. They, in turn, deserve our support.

Well, I can't think of anything else to say about Dayton, except, "I'll see you there."

73 de Dale W6IWO

Digital Journal Dinner

(Sponsored by IDRA)

Dayton Hamvention
Saturday May 18, 1996
Regency Ballroom - Radisson Inn

Order tickets now for this dinner. This is the premiere dinner of the digital gang. Don't miss it. Ticket information and menu as follows:

Menu

Salad Bar
Chicken Marsala
Roast Beef au jus
Whipped Potatoes
Peas & Carrots
Bread, butter
Beverage
Dessert Table

Ticket Info

Wayne Matloch, WA6VZI
Rte 2 Box 102
Cibola, AZ 85328
Tel: (520) 857-1004

Make checks payable for
\$23.00 per dinner to Wayne.
Sorry no credit cards.

No-host bar 6:00 to 7:00 PM
Dinner served at 7:00 PM

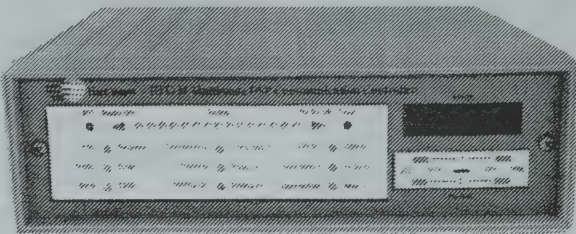
The PacComm PTC-II

The PTC-II is a new multi-mode controller and "communications platform" which contains powerful and flexible hardware and firmware.

Built in the United States by PacComm under license from S.C.S., the group that developed both the original PACTOR and PACTOR-II.

The PTC-II offers the most robust HF digital protocol available to radio amateurs, but it should not be overlooked that the PTC-II is configurable as a triple-port multimode controller supporting packet data rates of 1200 and 9600 bps and numerous other modes.

- A step-synchronous ARQ protocol.
- Full support of memory ARQ.
- 10 character MODE display, multi-colored LED tuning and status displays.
- Watchdog timer on HF PTT port.
- Specialized communication program provided.
- Firmware contained in Flash memory. Easy upgrade.
- Long-path capability for worldwide connectivity.



- Full compatibility with PACTOR-I (the original PACTOR), AMTOR, and RTTY.
- Automatic switching between Level-1 (PACTOR-I) and Level-2 (PACTOR-II) at contact initiation.
- All-mode mailbox with up to 32 megabytes of storage.
- Occupies a bandwidth of under 500 Hz - use your 500 Hz CW filters.
- DBPSK modulation yields 200 bps (uncompressed).
- DQPSK modulation yields 400 bps (uncompressed).
- 8-DPSK modulation yields 600 bps (uncompressed).
- 16-DPSK modulation yields 800 bps (uncompressed).

- Independent of sideband; no mark/space convention. Center frequency adjustable between 400 and 2600 Hz to exactly match your radio's filters.

- Differential Phase Shift Keying with two continuously transmitted carriers. 100 symbols per second. Constant bandwidth irrespective of actual transmission speed.

- Powerful Forward Error Correction (FEC): High performance convolutional coding. Constraint length of 9. Viterbi decoding using soft decision point. Coding rate varies between 1/2 and 7/8.
- Intelligent data compression monitors compression ratio and self-bypasses if not being effective. Huffman compression for English or German text. Markov (2 level Huffman) compression. Run-Length encoding for repeated sequences.
- Limited availability. Packet modems available later. \$995. Packet modems are optional at extra cost.

DSP firmware now
supports audio filtering.

PacComm Packet Radio Systems, Inc.

4413 N. Hesperides Street, Tampa, FL 33614-7618 USA

Switchboard: +813-874-2980

Facsimile: +813-872-8696

Orders/Catalog Requests: 800-486-7388 (24 hr. voice mail)

BBS: +813-874-3078 (V.34)

Internet: ptc@paccomm.com

URL: <http://www.paccomm.com/info>

Across the Pond

A look at the *digital-doings* of our European neighbors

by Neal Campbell, AB4MJ/ON9CNC • 10817 Ann Davis Dr. • Fredericksburg, VA 22401

Internet: neal.campbell@ping.be



XPPCI Software

Last month, we took a test drive of the new release of Express, version 3.5. As I write this, plans are in progress to release a bug-correction release, as well as the much-needed help file. I continue to use Express frequently, and it remains a very stable release.

When I first started discussing Clover with my friends, many expressed a strange reason for not wanting to explore Clover: Windows. Many people just do not want to use Windows, when plain DOS serves their needs.

In many respects this is a very logical reaction. To achieve similar performance with Windows-based applications as compared with their DOS counterparts, the hardware and software investment can be large. Try running a DOS logging system and compare it with a Windows logging system on a small, 80386SX16 system with 2 MB of memory!

Many people are also not yet comfortable with a mouse. It takes a while to get comfortable, but some feel no need to use one. It is possible to use Windows-based applications without the mouse (Express tries to provide every action with an alternative keyboard accelerator) but you miss a lot by not using one.

So what has this to do with Clover? Depending of your impression of the software that HAL Communications includes with PCI4000/M or P38, either a lot or very little. If you like the HAL software, then running under plain DOS is a treat. However, if you do not like the HAL software and have seen nice Windows-based programs Express, you are in a quandary.

It was with great anticipation when word filtered through the digital community that Gary Johnson, KF7XP, was writing software for the PCI4000/M and P38.

In case you have never heard of Gary, he has published software for TNCs for many years. XPKAM, XPCOM and XPDUAL have been available for years and have many dedicated users. He now publishes XPPTC for the PacComm and SCS PTC controllers. Needless to say, when I finally got a copy of XPPCI, the XPWARE for HAL devices, I was very intrigued.

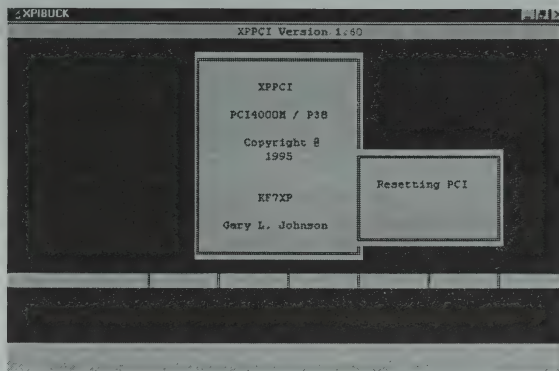
Features

XPPCI is a full-featured program that offers many features. It works with any of the three Clover-capable HAL devices (i.e., PCI4000/M, P38 and DSP4100).

Here is a quick breakdown of the features:

- Automated CQs
- Dual tuning indicators
- Full mode support
- Binary file transfer
- Macros
- Logging
- Interface with Buckmaster and SAM CDRM
- Customizable user interface.

As with all very sophisticated data controller terminal programs, until you become comfortable with using XPPCI, it can be somewhat embarrassing. I occasionally transmitting many lines of junk before I gained control of the program. I do not want to imply that XPPCI is very difficult to learn. It is very intuitive once you understand how KF7XP controls things.

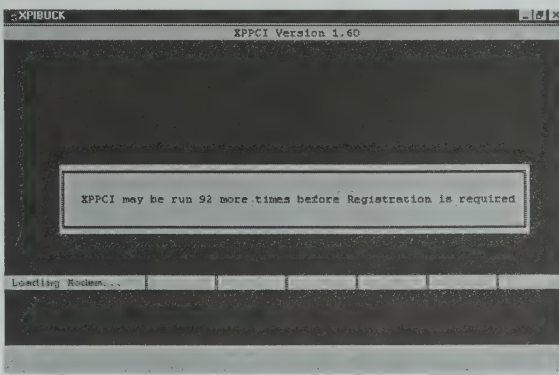


Installing XPPCI

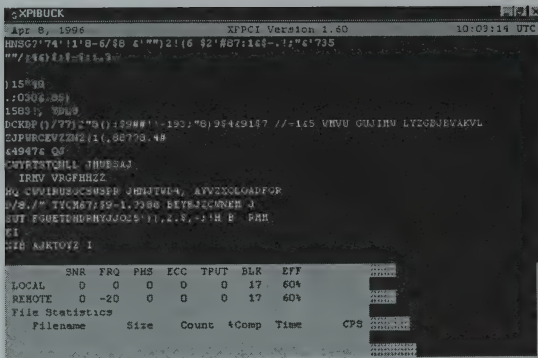
When you install XPPCI, the install program asks you for a lot of configuration information. It can take a little while to go through the questions, but once completed you have a jump start of getting on the air immediately.

Unless you bought a license for XPPCI before trying it out, one of the first things that impresses you is how Gary implemented shareware. For those few who are not familiar with the Shareware concept, Shareware is computer software that you can try for a while before having to buy it. If you decide you do not like it, delete it from your hard drive and you have not lost any money. If you decide to continue using it, you send money to the software author who usually gives you a registration number that "unlocks" the software for perpetual use.

KF7XP allows potential customers to try the program 100 times or for 30 days before having to buy it. After that, to continue legally using XPPCI, mail Gary a check for \$39. Believe me, this is one great deal!



If you are like I am, and never read any documentation before starting a program, the first thing you will see is that the firmware and DSP files for your HAL device are not found. XPPCI does not search for these files, nor ask you where they are. They must be in the same directory as XPPCI to work correctly.



Clover

To call CQ in Clover, or any other mode, hit F5. If someone answers your call, you will see a connected message as you would expect. If no one answers you, however, it is time to search for other Clover stations.

When you first start XPPCI, you notice the tuning bar at the bottom right of the screen. I have tried many times to use that tuning bar in all modes without much success. So, if you are looking for stations, hit the F1 key. This will activate the alternate tuning indicator.

This tuning system is reminiscent of the one used in the HAL software, but the tuning bars are much larger and easier to use. Since you hit F1 to activate the tuning indicators, it is only reasonable that once you have a connection, you can remove these tuning bars from the screen by hitting F1. This indeed is the case. In fact, unless you do this you cannot see what you are typing.

I really like the tuning system in XPPCI. It is simple and gets the job done. I find that I can tune more accurately with it than any of the other DOS based programs I have used.

To initiate a connect, hit ALT-C and a dialog box will appear prompting the call and the link method (robust or normal). Once you connect, a mini-logbook will appear on the screen.

If you would like to see echoed text in a separate window, hit the Esc key. One nice feature about XPPCI is that it lets you separate text from stations when you are monitoring a Clover qso. One station will appear in the normal receive window, and the other station will appear in the echoed text window, if it is activated.

Many hams that use XPPCI tell that it has faster performance on Clover than any other program. I must admit that I did not see any major differences, but the performance differences might not be visible because of my typing speed! It is safe to say that the program is no slower than any I have used. It certainly could be faster without my knowing it.

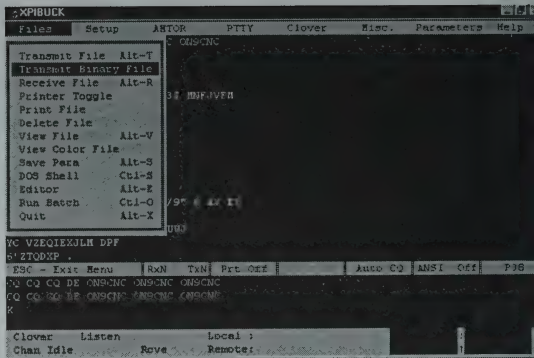
When you are in Clover mode and connected to another station, it is quite easy to send binary files. As with Express, you can send binary files while maintaining a comfortable keyboard chat with your friend. By selecting the Transmit Binary menu item from the File menu, the file transfer can begin.

Other Modes

I tried XPPCI in RTTY and Pactor modes. I never operate Amtor any more and figure that ASCII always works the same as RTTY Baudot.

In RTTY and Pactor, the program works like a charm.

In all non-Clover modes, calling CQ by hitting F5 is something special. XPPCI will enter auto CQ mode. In this mode, XPPCI will send 5 lines of CQ (user adjustable) and then wait 45 seconds (again user adjustable) for someone to call you and a contact to begin. If



no contact is forthcoming, XPPCI will call CQ again, for up to 5 times. This is a really nice feature, especially in Pactor mode. I could see where it would be very nice to have in a contest.

One of the nicest features of XPPCI is its integration with the Buckmaster or SAMs CDROM callbooks. During the installation, you specify which callbook you have, the drive location, etc. Anytime you want to check an address or name, enter ALT-Y. If you are connected to someone, their information will automatically be displayed. This is handy when you are sure you have worked someone before but do not remember their name.

XPPCI has a nice macro language that can do almost anything that you could desire.

XPPCI comes with a lot of documentation. There is one document, over 90 pages, that outlines the general operation of the XP family of software. A separate document outlines how XPPCI varies from the standard documentation.

In conclusion, XPPCI is a great program. I will send my check in this week to become a registered user, as it is very handy when you are in DOS and want to grab a spot. It has plenty of flexibility and does almost everything you could possibly desire.

One warning: Several years ago I downloaded XPKAM to see what my friends were talking about. I had heard how wonderful the program was, so I downloaded from a bulletin board. I casually "played" with it for a couple of hours without reading the manual and decided it was too complicated for me. I was using Hostmaster 2 Plus at the time, and felt it was easier to use.

XPPCI is not very complicated, but I highly recommend that you take advantage of the wonderful documentation and learn about the program before you start using it. It doesn't take many qso's where you lose complete control of the TNC and look like a fool before you throw the program away and stick with simpler stuff. In this case, simpler means software that lacks a lot of nice features.

This is a fantastic program. Get it, pay Gary the 39 bucks, and have a blast! If you want to download a copy of it, connect to Gary's WWW home page at <http://www.indirect.com/user/gjohnson/index.html>

Dayton

Dayton is a special place, where you get the opportunity to meet callsigns that you have seen throughout the year. I will be there this year and hope to meet many of the Digital Journal readers. For that matter, I hope to meet many of the Digital Journal staff!

I always buy something special at Dayton. This year will be no exception, except that I do not know what it will be! It will surely be something digital, for sure!

Until next month . . . 73, Neal

Contesting

Coming Events and Awards

by Rich Lawton, N6GG • 14395 Bevers Way • Pioneer, CA 95666



— RTTY Contests - Coming Events —

Date: Contest:

MAY 4-5 '96	ARI International DX	(Italian)
MAY 11-12	VOLTA RTTY DX	(Italian)
JUNE 8-9	ANARTS WW Digital	(Australian)
JULY 13-14	BARTG Amtor/Pactor	(English)
JULY 20-21	N. Amer. RTTY QSO Party	(USA)

NOTE 1: As noted last month, we have a new contest: the North American RTTY QSO Party. The detailed rules are elsewhere in this column. The National Contest Journal is sponsoring this one, their first RTTY contest. It should get a lot of attention from *cw/ssb* contesters, so expect a lot of RTTY first-timers.

NOTE 2: Ref: **SP DX RTTY:** I received a rules change from Christopher, SP2UUU in late March, too late for the April addition. The exchange is RST + CQ Zone, not QSO number. Also, the CQ Zone does not count as a multiplier.

— Reminders for Logs —

BARTG Spring RTTY (March 16-17) Logs must be received by May 31, 1996.

Mail to:

John Barber G4SKA
Box 8, Tiverton
Devon EX16 5YU
ENGLAND

EA WW RTTY (April 6-7) Logs must be received by May 10, 1996.

Mail to:

Antonio Alcolado EA1MV
Box 240
09400 Aranda de Duero
SPAIN

SP DX RTTY (April 27-28) Logs must be postmarked by June 15, 1996.

Mail to:

Christopher Ulatowski SP2UUU
Box 253
81-963 Gdynia 1
POLAND

— — COMING UP: — —

↔ **VOLTA RTTY WW Contest** ↔
11-12 May 1996

Sponsored by SSB and RTTY Club of COMO, and A.R.I. (Associazione Radioamatori Italiani) honoring Italian discoverer of electricity, ALESSANDRO VOLTA. (ref. ARI, I2DMI)

CONTEST PERIOD: from 1200Z Saturday, to 1200Z Sunday.
(24 hours, no rest periods required)

BANDS: 80, 40, 20, 15, and 10M.

CLASSES: A1 - Single op, all bands
A2/xx - Single op, single band (xx = band)
B - Multi-op, single transmitter
C - SWL.

EXCHANGE: Send: RST + QSO nr. + CQ Zone nr.

MULTIPLIERS: Each DXCC Country, plus call areas in VK, VE, and USA. Do NOT count VK, VE, or USA as separate country. (USA stations with callsign from one call area but now live in dif-

ferent area should give proper identification, such as: K6WZ/0.) The same multiplier counts again on a new band. (Band mults) An additional multiplier is given for each INTERCONTINENTAL COUNTRY worked on at least four bands. Contacts between stations within same country will not be valid, such as: A W2 station can work W1, W3, etc. but not W2. A QSO with a station that counts as a multiplier will be valid only if that station appears in at least 4 other logs, or a contest log is received from that station.

QSO POINTS: Use EXCHANGE POINTS TABLE to compute QSO points. Contacts made OUTSIDE one's own continent on 80 or 10M count double QSO points.

FINAL SCORE: Total QSO points x total mults (band mults + each INTERNATIONAL COUNTRY worked on 4 bands) x total number of QSOs. Use Exchange Points Table to determine points scored for each QSO.

AWARDS: A special trophy will be awarded to the top stations in each class. In addition, a certificate with special sticker to all entrants.

LOGS: Use separate logsheets for each band. Logs must show: BAND, DATE and TIME (UTC), CALLSIGN and MESSAGE Sent and Received, POINTS and NEW MULTIPLIER PREFIX. Summary sheet must show full scoring, and list of multipliers worked.

DEADLINE: Logs must be received by July 30, to qualify. Send logs to:

Francesco Di Michele, I2DMI
P.O. Box 55
22063 Cantu
ITALY

COMMENTS: This is a 24 hour contest. The QSO points are determined by the EXCHANGE POINTS TABLE. This table, based on the 40 CQ Zones, is arranged so that the further away the QSO is from your zone, the higher the points scored.

NOTES:

- CQ zones DO NOT count as multipliers.
- Since W/VE/VK call areas count as separate countries on each band, CQing will be the best way to make a good score for W/VE/VK ops. Band multipliers will spread out the CQing, too, and should make the low bands more active.
- QSO's outside your own continent on 80 and 10M are worth double QSO points.
- This contest uses the number of QSO's as an additional multiplier, and that creates astronomical scores... millions!

— ANARTS WW RTTY/Digital Contest —
8-9 June 1996

(Ref: ANARTS, VK2BQS)

Sponsored by Australian National Amateur Radio
Teleprinter Society

CONTEST PERIOD: from 0000Z Sat. to 2400Z Sun. (48 hours)
Maximum operating time allowed: 30 hours for Single op entries and SWLs. There are no restrictions on the duration of rest periods. Multi-op stations may operate the entire contest period. Summary of operating times must be submitted with each score.

BANDS: 80, 40, 20, 15, and 10M. (five bands)

CLASSES: (A) Single-op; (B) Multi-op; and (C) SWL.

MODES: All digital modes permitted; RTTY, AMTOR, FEC, and Packet.

EXCHANGE: RST + Zone + Time (UTC).

MULTIPLIERS: Each ARRL DXCC Country, and each call district of VK, JA, VE, and W count as separate countries on each band. QSO's with one's own country is not valid for multiplier count. (W6

may work W7 or W5 for mult, but not W6.) Each continent QSO counts as a multiplier (maximum of six).

QSO POINTS: Use Exchange Points Table to determine QSO points. (See the Table on page 20 of April '93 issue of RTTY Journal.

SCORING: Total QSO points x total multipliers x number of continents worked. (max. 6) After the above calculations, world stations add 100 points for each VK QSO on 20M, 200 points for each VK QSO on 15M, 300 points for each QSO on 10M, 400 points for each VK QSO on 40M, and 500 points for each VK QSO on 80M.

AWARDS: Awards will be issued for 1st, 2nd, and 3rd place on world basis, and also on a country basis.

LOGS: Separate logsheets are required for each band. Logs must show: BAND, DATE and TIME (UTC), CALLSIGN, MESSAGE Sent and Received, NEW MULTIPLIERS, and QSO POINTS. Summary sheet must show: Your callsign, name and address of operator, bands used, points claimed for each band, number of VK stations QSOed, total points claimed, and signature/s. Multi-op station logs must contain the signatures and callsigns of each operator.

LOG DEADLINE: Must be received by September 2, 1996. Send logs to:

Contest Manager, VK2BQS
Jim Swan
P.O. Box 93
TOONGABBIE, N.S.W. 2146
AUSTRALIA

COMMENTS: For single op stations, this is a 30 hour contest (out of the 48 hours). Multi-op stations may operate the full 48 hours. QSO points are determined by the Exchange Points Table. This table is based on the 40 CQ Zones and is arranged so that the further away the QSO is from your Zone, the higher the points scored. (PLEASE NOTE: CQ Zones DO NOT count as multipliers.) Each VK, JA, VE, and W call areas count as separate countries on each band. This contest counts band multipliers, making the low bands more active, and giving more bonus QSO points, too. Don't forget to work the continents for additional mults. Try to keep track of your operating time, as single ops are only allowed a maximum of 30 hours out of the 48 hour period. Your Summary Sheet requires that you list your TIME ON/OFF records.

— BARTG AMTOR/PACTOR CONTEST — July 13-14, 1996

Sponsored by British Amateur Radio Teledata Group (Ref: BARTG, G4SKA)

CONTEST PERIOD: **AMTOR:** From 0000Z Saturday to 0000Z Sunday (24 hours)
PACTOR: From 0000Z Sunday to 0000Z Monday (24 hours)
No rest periods.

BANDS: 80, 40, 20, 15, and 10M

CATEGORIES:

- | | |
|----------------------|------------------------|
| 1. Single op, Amtor | 3. Single op, Combined |
| 2. Single op, Pactor | 4. Multi-op, Combined |
| | 5. SWL |
- Single transmitter only

EXCHANGE: RST + QSO nr. + TIME in UTC.

Use FEC for calling, and ARQ for contest message exchange.

MULTIPLIERS: Each DXCC country, including first QSO with W, VE, and VK, counts as a multiplier on each band. Also, each call district in W, VE, and VK will count as an additional multiplier on each band. (Band mults) In addition, each continent (6) counts once, not once per band. Stations entering in combined categories count multipliers only once per band, regardless of mode.

QSO POINTS: Count 1 point for each completed QSO. Same station may be worked on other bands. Any station QSOd using Amtor may be contacted on the following day using Pactor. Duplicate QSOs on same band receive zero points and must be clearly marked in the log.

FINAL SCORE: Total QSO points x total multipliers x number of continents (max 6)

LOGS: Use separate logsheets for each band. Logs must show:

BAND, DATE and TIME, MODE, CALLSIGN, MESSAGE Sent and Received, new MULTS, and POINTS claimed. Summary sheet must show full scoring, times of operation, and address for correspondence. Include names and callsigns of all multi-op station operators. Any incomplete entries will be classified as check logs. Computer generated logs containing all specified information are welcome.

DEADLINE: All logs must be received by September 10, 1996 to qualify.

Please send your contest or check logs to:

JOHN BARBER G4SKA
PO BOX 8, TIVERTON
DEVON EX16 5YU
ENGLAND

AWARDS: Trophies will be awarded to the winning stations in each category, and certificates will be awarded to the top 3 stations in each category and the top 3 single operators for each mode in each continent.

Your comments on the contest would be much appreciated. Please include them with your log.

COMMENTS: BARTG has brought in their well-known and well-liked RTTY contest format and fitted it into a unique Amtor/Pactor combination mode. It's a bright idea, and a way to spread contesters around in the digital modes. The contest will also provide a clever comparison as to which mode has the advantage in QSO rates, and FEC pileups, and switching from FEC to ARQ in the QRM, all in one weekend. Place your bets: Which mode has the edge? Each mode is 24 hours long: first is Amtor, then Pactor. Any station worked on Amtor may be worked again the following day using Pactor. But combined entries count mults only once per band, regardless of mode. This means that if you work a PY station for a mult on 20M Amtor, you can't count a 20M PY as a mult again when you work him later on Pactor. Stay tuned (up).

— North American RTTY QSO Party (NARQP) — July 20-21, 1996

Sponsored by National Contest Journal (NCJ)

CONTEST PERIOD: Starts at 1800 UTC Saturday, ends at 0600 UTC Sunday (12 hours)

Single Ops: Max operating time allowed: 10 hours. Off times must be minimum of 30 minutes and clearly marked in log. Multi-op stations: no off times required.

MODE: RTTY only. **BANDS:** 80, 40, 20, 15, and 10M.

CATEGORIES: a) Single Op, 150 W out b) Multi-Op, 2 transmitter, 150 W out.

Single Ops: Only one transmitted signal at a time. Spotting help not allowed.

Multi-ops: Must have minimum of 10 minutes between band changes, and make separate logs for each band.

Suggested Frequencies: 3585, 7085, 14085, 21085 and 28085 kHz.

Try 10M at 1900z and 2000z: 15M at 1930z and 2030z.

EXCHANGE: RST + your name + QTH (State, Province or Country)

MULTIPLIERS: Each state (incl. KH6 & KL7), each Canadian province (13) and each DXCC country in North America, on each band. (Band mults) (Do not count USA, Canada, and KH6 or KL7 as countries) DXCC countries outside of North America do not count as mults but may be worked for QSO point credit.

QSO POINTS: Count 1 point for each QSO on each band.

FINAL SCORE: Total number of valid QSOs x total band multipliers.

LOGS and SUMMARY SHEETS: 1) Summary Sheet: show number of QSOs and mults for each band, total QSOs, total mults, and final score. Also, Team name, if any, power output, name, callsign, name and QTH of operator, callsign and QTH of station, and a signed declaration of abiding by all rules. 2) Logs: Complete log of each QSO, including clearly marked dupes. Logs must show: band, date, time, callsign, exchange, and new band mult. (Multi-op stations must use separate logsheets for each band); Separate checksheets for each band; List of claimed mults for each band.

LOG DEADLINE: Logs must be postmarked within 30 days of contest.

Mail to:

Ron Stailey, AB5KD
504 Dove Haven Dr.
Round Rock, TX 78664-5926

PENALTIES and DISQUALIFICATIONS: For each unmarked dupe QSO, you lose that QSO plus an additional 3 QSOs. For each QSO for which you are not in the other station's log, you lose that QSO plus an additional QSO. For each QSO for which the log data is incorrectly copied in any respect, you lose claim for that QSO. Entries with score reductions greater than 5% will be disqualified. Any entry may be disqualified for illegibility, illegal or non-ethical operation. Such qualification is at the discretion of the NCJ Contest Review Committee.

AWARDS: Plaques will be awarded for the highest Single-op score and Multi-op score. Certificates of merit will be awarded to highest scoring entrant from each State, Province, and North American Country. Must have at least 200 QSOs.

TEAM COMPETITION: Team competition is limited to a maximum of 5 single operator stations as a single entry unit. Groups having more than 5 members may submit more than one team entry. **PRE-REGISTRATION REQUIREMENT:** To qualify as a team entry, the name, callsign of each operator, and callsign of the station operated should the operator be a guest at a station other than his own (e.g. K1NG operated by WF1B) must be registered with AB5KD. The team registration information must be in writing, or telegraphic form, or e-mail (ab5kd@easy.com) and must be received before the start of the Contest. There are neither distance nor meeting requirements for a team entry. The only requirement is pre-registration of the team.

COMMENTS: We now have an RTTY NAQP. It's a short 12 hour sprint - a non-DX blast for low power stations. (150W max.) The object is to work as many North American stations as you can, so that makes it a rate-contest first, and let mults fall where they may. There are band mults, so there'll be lots of mults to keep track of. This kind of contest will help you to smoothe out the rough edges of your operating skills by keeping you alert and quick. If your choice mode is CQing, you'll get into a routine of "one-key-itus" when using logging software, especially when using "RTTY by WF1B" and callers use "DE" in front of their calls. If you want to increase your skills with "Search and Pounce", it's a matter of how quickly you find CQs and how short to make your call and exchange. If the station you're working is loud, send exchange just once.

-- Aluminum Fence Wire Makes Great Antennas --

I started using aluminum fence wire for antennas back in the early '70s. I bought 2 half-mile rolls from Sears to put up, among other things, a 3-legged vee beam at a 5 acre mountain top overlooking Monterey Bay in the Santa Cruz mountains. Elevation was about 3000 feet. Fantastic contest QTH! (You could see Tokyo on a clear day! Well... almost...) Had a 2-room cabin for weekend living. Had no neighbors, no paved roads, no water, no line noise. (no power lines) Had a 3 kw motor generator for power, that I hauled in for weekends in ham heaven.

The vee legs were over 400 feet long, and the Zepp feedline was about 250 feet. The supports were scrubby pine trees and I used large clothesline pulleys at the ends, with nylon rope and scrap iron for weights to handle the strain on the wire from swaying trees. They were up for over 5 years, and the wire never broke, but the nylon rope did snap twice. I also made 2 Sterba curtains for 20M. Each were 3-over-3 and at right angles, all made from aluminum fence wire. All insulators were made from 3/8 inch nylon rods 4 inches long.

To the point: Here's some advantages of aluminum fence wire:

- It's very light, hard drawn, and easy to handle. Almost no sag on long spans.
- No soldering necessary. Just light sanding before twisting joints together.
- Doesn't need big insulators at the support ends because strain is so slight.
- It's cheap. Checked price today at a local feed barn... \$4.89 for

250 feet.

- It's almost invisible. Not shiny or dark like enameled copper wire.
- It's strong. Diameter is .075 inches (1.85 mm) about equiv. of #13 AWG wire.

Took it all down in the late '70s when we bought this property in the Sierras.

Today I use that same wire for my 80M inverted vee. At the ends are 3/8 inch nylon rods 4 inches long, and support lines are solid braid, 1/8 inch nylon. This line is light, weather resistant, and extremely tough (425 lb test break) and easy to handle. Just cut where necessary with wire cutters and heat ends with a match to keep ends from unraveling.

I also use the fence wire for a 160M dipole that is 10 feet off the ground and zigzags among various pine and cedar trees near the edge of our property. It is used for receiving only, and is much, MUCH, quieter than my 160M vertical - a top-loaded 100 foot tower I use for transmitting. Signals may be 2 or 3 S units weaker on the dipole, but on 160M, when static is already S9 on the vertical, it's a matter of signal-to-noise ratio and not signal strength. (By the way, I use the "Transverter" receptacle on my Kenwood TS-930S for receiving antennas. A Receiving Antenna Select switch allows me to choose from several receive-only antennas.)

Lastly, I used that wire for my 40M quad loop array. Two full-wave quad loops hang at right angles from each other, near the top of my 100 foot tower. The bottom of the loops come together at the 35 foot level. A small weather-proofed relay box selects the desired loop. A quarter wave piece of 75 ohm coax (RG-59/U) is used to match the 100 ohms of either loop to the 50 ohm (RG-8/U) feed-line. The match is really superb!

The outer corners of the loops (the high voltage points) each have a 3/8 inch nylon rod, 4 inches long, that has the afore-mentioned 1/8 inch nylon braided line attached that pulls the corners of the loops out, to make them truly squares, standing on their corners. The nylon lines are tied to the top of 7 ft steel fence posts. The antennas are horizontally polarized, each essentially 2 stacked halfwaves in phase, with a low impedance feed, and at a mean height of 1/2 wave to give a clean, low angle vertical lobe. They are very broad in SWR response - very close to 1-to-1 SWR, clear across the 40M band.

Though bi-directional, one is for Asia/South America, the other for Europe/Australia (and Europe Long Path), their side nulls are quite pronounced, and are very quiet on receive. One reason: it's a closed loop system so no wind or rain static can create those annoying spat-spats. And, horizontally polarized, they minimize regular static pickup from vertically polarized lightning strikes. An advantage of the light aluminum wire is that the loops can be drawn tight at the sides and have no sag to sway in the wind. And the dull grey aluminum surface make the loops almost invisible.

((73)) See you in the pileups... Rich, N6GG

P.S.

Drop me a line with an idea to share,
Or, drop me a line with an item to air.
Drop me a line with anger to bare...
But don't drop ME... 'cause I care!



NOW YOU CAN PLACE YOUR ORDER FOR IDRA BOOKS AND SOFTWARE,
& RENEW OR BEGIN YOUR MEMBERSHIP, COMPLETE WITH SUBSCRIPTION
TO THE DIGITAL JOURNAL USING YOUR CREDIT CARD!

The Contest Chair

Hints, Tips & Inspiration for Better Scores

by Ron Stailey, AB5KD • 504 Dove Haven Dr • Round Rock, TX 78664

Internet:ron481@austin.email.net



Hello Contesters and DXers: May has wiggled its way up to the active month again and we have a full schedule for this month. May 4th/5th we have the ARI International DX Contest that now has a RTTY category. You can get free software (BM-compatible) to administrate the contest. It calculates points, multipliers and score. You just have to type the call sign and the received report. It prints logs, summary and dupe sheets as well as QSL labels. It has Packet Cluster capability but doesn't send or receive RTTY. But it has an "Import from K1EA" option so the participant can use WF1B's RTTY, then convert his file into K1EA.RES format and import it into their software for the right score calculations.) It can be obtained by sending Five U.S. dollars or 10 IRC's to cover the diskette and postage expenses to the Contest Manager: Paolo Cortese I2UIY, PO Box- 14, I-27043 BRONI (PV), Italy.

On the 11th /12th we have the Volta contest. RTTY by WF1B now supports the Volta. This is one of the older classics you don't want to miss.

The very next weekend is the Dayton Convention. I sure hope all of you have your reservations and dinner tickets in hand. We do have a few tickets left for the Contesters/DXers dinner. There is still time to send your checks. What I have left over I will bring to Dayton so, even if you make up your mind at the last minute, you can squeeze in.

One other subject for this month, one we have all talked about from time to time. TVI, and what can we do about it. I have been getting some mail asking if I live out in the country or in town. If I live in town, have I ever had a TVI problem. If I (did/do) have a TVI problem, what did I do about it, or did I ignore it. These are several questions asked, and I have put them all together.

TVI is something most all of us have experienced at one time or another. Including myself. First I live in town just a normal Texas type lot about 200' X 250' most of my friends say I'm the type that tries to put as many towers as possible at one qth. Yes, I have had TVI problems. "Oh Boy have I had some TVI PROBLEMS" Not only have I had problems over TVI, I have also had a little bare knuckle drill on my front porch because of TVI. I wouldn't suggest this as a method of solving the problem. However, in my case it seemed like the only thing to do at the time.

Some years ago, I was in the middle of a SSB contest and my door bell started ringing and ringing. I had never heard a door bell go off that many times in my life. I figured my house had to be on fire. I went to the door and before I could say anything, a nice sized fist was headed in my direction. Now I really wouldn't say that WW-III was in the beginning stages, but the battle for Stailey's hill had just begun. A few slanderous words were said, a bunch of fists were flying, the next thing I remember, that fellow was laying in my front yard. I sat down on the porch wondering what this was all about, when he started coming around. The only thing I could think of saying was: "I DON'T EVEN KNOW YOUR WIFE." Believe it or not, he kind of smiled, and that's when I found out I had a TVI problem. Not only with him but with several neighbors, he was just the maddest..

I think I have tried everything Radio Shack has to prevent TVI. Most of it I never had much luck with at all. Most of us have heard of shielded beads that helps prevent TVI. Radio Shack sells an all purpose type. They do work if the problem isn't real bad. If you are having a few lines across the TV it can be fixed with Radio Shacks shielded beads.

Several years ago a guy told me about a company in California called PCS Electronics. These folks sell shielded beads that really work. Using their product, I have never seen, TVI that I can't get rid of. Using these shielded beads my Grand Children can watch TV or a tape in the VCR while I'm contesting using my Alpha-87A at 1000 watts out. My shack is about 40' from the TV and VCR. Folks, these things work. Or they have for me and my neighbors. My neighbors and I get along real well.

These shielded beads are fairly expensive. For 25 each (that's both sides or 50 halves) They cost \$105.00. The minimum order at that time. Today cost is \$3.40 for one pair. There is a \$25.00 minimum order. For \$27.20 you can get eight sets. (Both halves) They are a little expensive, but not what I would call major money. Especially for what they have done for me. They come cut in half, when you put them together they have a hole in the middle. Put as many turns of your cable lead as you can get in one half of the shielded bead, then put the other half over it and tape them together. I have two on the TV and three on the VCR. With zero TVI.

Their address is: PCS Electronics, 677 Palamar Av. Sunnyvale, CA 94086 • Phone: (408) 737-1333.

Shielded Beads Part# 2643164151

We can talk about getting RF out of you telephone next month, I can also set my Wal-Mart (EL Cheap-O) phone on the 87A and talk to you during the contest...with zero RF problems. I have lots of information on all sorts of RFI problems. If you're interested in this type of article let me know. If you already know all about this we will talk about something else. Let me hear from you.. My e-mail address is: <ab5kd@easy.com>.



This month we will visit with Frank Acklin, HB9NL, HB0 / HB9NL, of Buiron Switzerland. Frank is 72 years of age, is retired and has been licensed since 1950. He has had the same call sign since he was licensed. He normally operates in CW. Mostly by popular request he now operates RTTY from both HB9 and HB0 locations. He operates RTTY in the CQ/DJWW RTTY and JARTS RTTY contests, usually from his HB0 qth.

Frank's station is the same at both locations. Yaseu FT-990 and a FT-757GX with an Alpha-76PA on all bands. His TNC is a Tono 5000E for RTTY, FEC and ARQ.

His antennas at HB9: a 4 Element Yagi up 17meters (55.7 feet) for 10-15-20 meters. He says he uses the same antenna for 10-18-24 mHz. His antenna has no traps. For 160, 80 and 40m he uses a folded Umbrella (see photo).

His antennas at HB0: a 3 element Yagi up 10meters (about 33 feet) for 10-15-20 meters. He also uses the same antenna for 10-18-24 mHz (no traps). For 160, 80 and 40m he uses a 160m long Windom. Frank has been operating from his HB0 location since 1989.



He is in almost every CW contest that comes along. He has more than 340 countries confirmed, 90% on CW. At the time of this writing he had 102 countries on 160m, and was the first HB9, to receive WAC Award on 160m.

Frank has worked more than 100,000 QSO's and is still QRV every day on CW. He will QSY to RTTY, FEC and ARQ on request. He well QSL direct or VIA Buro 100%...

I would like to thank Frank for his help in preparing his article.

Next Month we feature the IDRA WW WPX contest results, then comes the CQ/DJWW RTTY DX results in July. The August Issue will feature a visit with Dr. Steve Tobe, VE3XO in Toronto Canada..

Starting this month we will have something new added to the Contest Chair Column. Eddie Schneider, W6/G0AZT thought it would be a good idea if we listed some records of all contests before or on the month of each contest. Just in case someone would like to try and break a record. We will list all categories we have for each contest and will also list a North America, US/VE category. Since this will be the first month we will have the record results, the ARI contest is the first weekend in May, I doubt many of our readers on a world wide scale will get the DJ in time to do any strategy planning for the ARI test.

However, for some of us in North America we could make a few plans. I'm listing the ARI RTTY World records. The month of May is ARI and Volta contests. In June we have the ANARTS contest. Here are the records for these contests.

ARI RTTY, World Records: ARI is a S/Op category only. (May 4-5 '96)

Year	Cont.	Call	QSO's	Mults	Score
'95	Europe	UT7I	285	158	241,898 (World Record)
'95	Asia	UN5PR	158	107	110,222
'95	NA	HP1KZ	43	23	4,830
'93	US/VE	WA8FLF	21	16	3,072

Paolo I2UIY has asked for our help to get the ARI RTTY category going. As you can see it wouldn't take much to set new records in

any of these categories. Lets all try to support the ARI contest, and show the ARI committee we do appreciate the new RTTY category. All contests deserve our support.

Volta Contest World Records: (May 11-12, '96)

Year	Call	Points	QSO's	Mults	Score
S/Op	All Band (World)				
'95	LZ5Z	5501	371	122	148,986.262
S/Op	All Band (US/VE)				
'91	WA7EGA	4458	224	89	88,874.688
S/Op	S/B 80m (World)				
'92	YB2OK	1055	45	31	1,471.725
S/Op	S/B 40m (World)				
'95	SV2BFN	554	76	29	1,221.016
S/Op	S/B 20m (World)				
'95	UA4LCQ 2	373	229	61	33,148.437
S/Op	S/B 20m (US/VE)				
'90	W6/G0AZT	1364	91	32	3,971.968
S/Op	S/B 15m (World)				
'89	G0ATX	2432	173	40	16,829.440
S/Op	S/B 15m (US/VE)				
'94	WS7I	1729	83	38	5,453.266
M/Op	(World)				
'92	LZ5W	5759	331	99	188,716.671
M/Op	(US/VE)				
'94	VE3FJB	1390	134	49	9,126.740
SWL					
'91	ONL383	1454	152	82	20,332.736

ANARTS Contest World Records: (June 8-9, '96)

Year	Call	QSO's	Points	Mults	Conts	VK's	Score
S/Op	All Band (World)						
'88	VK5RY	???	13163	106	6	N/A	8,371,668
S/Op	All Band (US/VE)						
'88	WB5HBR	???	5428	122	6	3500	3,976,796
M/Op	(World)						
'88	VU2JX	???	10071	140	6	1800	8,461,440
M/Op	(US/VE)						
'88	WA7EGA	???	6954	162	6	590	6,765,188
SWL							
'88	G1DPL	???	3301	80	6	400	1,584,880

The above information was extracted from official results, issued by the contest organizers and with the help of OH2LU, AB5KD and compiled by Eddie Schneider, W6/G0AZT.

The next three contests:

Contest	Dates	Start Time	End Time	Operating Time
VOLTA	May 11-12	1200 UTC Sat	1200 UTC Sun	No off times
ANARTS	Jun 08-09	0000 UTC Sat	2400 UTC Sun	30 of 48 hrs.
NAQP	July 20-21	1800 UTC Sat	0600 UTC Sun	10 of 12 hrs.

The NAQP RTTY contest is the new kid on the block. Sponsored by the NCJ magazine, this is its first running. We have great hopes for this contest because it has been one of the favorites in North America in CW/SSB modes for sometime. There will be plaques issued for both S/Op and Multi/Two high scores. NAQP RTTY is the first contest to offer a Multi/Two competition in RTTY mode. All low power (150 watts max output) both categories. You multi ops should have a blast with this one. See the rules in Rich N6GG's column.

Until next time,
73's de Ron AB5KD

NTS - The National Traffic System

This month: A look at traffic routing

by Thomas E. Housworth, N3PGG • 700 Della Street • Versailles, MO 65084
email: n3pgg@aol.com

My last article gave an overview of the NTS System. This month I will take you a little deeper into the system and discuss NTS traffic routing and the role a Digital Mail Box Operator (MBO) plays. The next few paragraphs are excerpts taken from the ARRL's Public Service Communications Manual (PSCM).

The following example shows how traffic is or can be routed through the National Traffic System. In each case, perfect (ideal) conditions and 100% adherence to system as previously outlined are assumed.

This example demonstrates how a message originating in South Carolina finds its way to Los Angeles in the evening cycle. W4ABC is an amateur in South Carolina who has been asked to originate a message to Los Angeles. All times are UTC.

1. W4ABC reports the message into the South Carolina Section Net at 0000 and transmits it to W4ANK, the station designated to take traffic to 4RN (4th Region Net).
2. W4ANK takes the message to 4RN at 0045, gives it to N4GHI, the station designated to take traffic to EAN (Eastern Area Net).
3. N4GHI reports the message into EAN at 0130, gives it to W3PQ, who is TCC (Transcontinental Corps) Station B.
4. W3PQ keeps a TCC out-of-net schedule with N6WP (TCC Station H) and sends him the message. This is a transcontinental hop, but the two stations involved may pick any frequency or mode in any band. The exchange must have been completed by 0430, when PAN (Pacific Area Net) meets.
5. N6WP reports the message into PAN at 0430, gives it to W6JXK, the RN6 (Region Net 6), receive representative.
6. W6JXK reports the message into RN6 at 0530, gives it to W6INH, the Los Angeles Section representative.
7. W6INH reports it into Southern California Net at 0600, gives it to K6INK, the Los Angeles station nearest the destination.
8. K6INK can telephone or otherwise deliver the message to the addressee upon receipt. The message originated in South Carolina at 0600, was delivered in LA at about 0630.

In addition to the NTS routing system, wide-coverage independent nets and direct connections to key cities in foreign countries are also available. These key cities, usually accessed through the independent nets, have been especially valuable in assisting with disaster communications in Central and South America. The independent net take on a wide variety of types and forms with many of the most active heard daily on 40 and 20 meters. The 20-meter nets, particularly the International Assistance and Traffic Net, are especially important in covering the areas of the Caribbean, Central, North and South America.

Message Routing in the Digital Station Network

In the HF system of NTS Digital Station, routings are more flexible, and are left to the discretion of the individual MBOs, under the general direction of the Area Digital Coordinators. Routings should, of course, be planned with the goal of moving the traffic as close to its destination as quickly as possible, and/or to fill liaison function that cannot be met in the traditional system. Routing should always be made with stations that can be relied upon to handle the traffic expeditiously and responsibly, under NTS official authority and direction.

The same principles apply to the VHF packet network of NTS nodes at the local and Section levels. It is the responsibility of the Section Traffic Manager and the Net (Node) Managers to ensure that NTS traffic is cleared, or otherwise forwarded or handled expeditiously, on a daily basis. (*End of excerpts*).

One of my areas of concern is the italicized area in the paragraph above. The MBO "good ole boy" network briefly mentioned last article has, through lack of a better explanation, appointed themselves in most cases the determining factor in who's considered reliable. In my experience, as long as I routed ALL my traffic through one of these stations which was AMTOR only, I was considered reliable. When I asked to start eliminating the middle man and routing directly to other stations with PACTOR capability which supports faster data rates, I was told NO and in one case found myself LOCKED OUT of one of the "good ole boy's" BBS in the Northeast. I then received a phone call telling me that I was considered a rebel and this MBO would see to it that I would never get anymore traffic. Life's been much more pleasant since that day and guess what, I still get plenty of traffic.

I'm of the opinion that if an Amateur purchases the equipment to support Digital HF, has an interest in NTS Traffic, and has coordinated with an MBO operator to accept traffic for specific areas, he's reliable in my book. I don't think we can ever have too many volunteers. I also think we need to support the E-mail capabilities found on most on-line services to forward NTS Traffic. WINLINK ver 1.32 easily supports message importing /exporting to email messages. The Internet continues to grow daily. For those of you that have used it, I think you've discovered the data rates far exceed any HF capabilities to date. You may say that NTS messages are supposed to be sent via Amateur radio but why limit capabilities? Let's get 'em there via the fastest means available.

The grass is starting to turn green here in Missouri and that means that Dayton is just around the corner. I plan to be among the crowd this year, trying to stay out of the way of those with a much greater mission in mind than mine. If you see me, please take the time for an eyeball QSO.

Until then, 'Here's to you digitally' from

Tom/N3PGG

Contesters / DXers Dinner

Dayton Convention
Friday May 17, 1996 Mayfair I / II
Radisson Inn

If you plan to attend the gala affair, you must pay in advance for your dinner. Dinner and ticket information as outlined below:

Dinner Ticket Information

Ron Stailey, AB5KD
504 Dove Haven Dr.
Round Rock, Tx 78664
(512) 255-5000

Make check payable for \$19.00 per dinner to Ron Stailey. Tickets will be mailed back to you the next day.

Sorry no credit cards can be accepted.

COMO SUBSCRIBIRSE A

RADIOAFICION MICROCOMPUTACION

Esta revista se publica bimestralmente y en una de las páginas iniciales se indica cómo subscribirse. El precio de la subscripción, seis ejemplares anuales que incluyen la **GUIA DE EQUIPOS y ACCESORIOS** (edición de Noviembre/Diciembre), en sobre cerrado, por vía aérea al domicilio del lector, es de US\$40.00 para todos los países con exclusión de México y Canadá. En razón de las más bajas tarifas postales, para los dos últimos la subscripción anual cuesta US\$20.00. Para los Estados Unidos y Puerto Rico el precio de la subscripción anual es de US\$18.00. Los pagos deben hacerse en moneda norteamericana mediante cheque de cuenta bancaria en los Estados Unidos, cheques de viajero, giro postal u orden de pago internacional a nombre de:

PAN AMERICAN PUBLISHING COMPANY
252-35 Leads Rd. Little Neck, New York 11362
Estados Unidos de Norteamérica

Debido a las elevadas comisiones de los bancos de Estados Unidos para su cobro, **NO** se aceptan giros bancarios internacionales.

COMMUNICATIONS

Make the Connection
with

FLORIDA SKIP Magazine

.....
Amateur Radio - Computers
Digital Techniques
News - Information - Features
Net News - Club News - Traffic Reports
QCA, KOTK, OOTC, MARS, ARRL
Hamfests - Fleamarkets - FCC Actions
.....

- What's on Internet/World Wide Web?
- Privacy issues in communications.
- Government regulations vs. amateur radio & computers.
- What is the clipper chip?
- ECPA and you.
- How secure is E-mail?

Read about it in:

Florida Skip

672 Indian River Dr., Melbourne FL 32935
ONLY \$12/yr - Write for sample copy
Phone/Fax 800-421-3279

Amateur Radio Trader™The Ham Radio Market Place.™

Join ham radio's most revolutionary happening since the no-code license!

- Hundreds of radios, products and services • Current pricing and availability
- Low subscription and ad rates • 250+ classified headings
- Major credit cards accepted • It's like holding a hamfest in your hands!

Call **Amateur Radio Trader** today to be a part of amateur radio's most comprehensive resource for equipment and other products and services.

For immediate service call toll-free (USA and Canada)

1-800-774-2623 or fax 1-800-423-9030.

Internationally, call

615-484-5137 or fax 615-484-2532

YES! Please start my subscription to:

Amateur Radio Trader, The Ham Radio Marketplace.

Subscription rates for one year (circle preferred rate):

Third class \$14.95 (just \$.62 per issue)

First class \$34.95 (just \$1.46 per issue)

Name _____

Call Sign _____

Address _____

City _____

State _____ Zip _____ Phone () _____

() Check or money order Charge my () ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐
Credit Card # _____ Exp. _____

Complete, clip and mail this form to: **Amateur Radio Trader - 410 West Fourth Street**
P.O. Box 3729 - Crossville, TN 38557

All rates subject to change without notice.

The Last Word

from the Editor

Jim Mortensen, N2HOS • PO Box 596 Somers, NY 10596-0596.

CompuServe ID: 71573,1077



(The following editorial was posted on the Editor's Page website on April 3, 1996. Nothing has happened since then to change my opinion.)

There's a war going on out there—and it is being fought at the wrong time, over the wrong issue and in the wrong place. Like most wars. These 'troops' flood the Internet daily with new claims about the superiority of one mode, one piece of hardware. They then fling an equal volume of flaming barbs aimed at anyone who questions the claims or expresses a contrary opinion. I refer, of course, to the war of words being waged by a group of PactorII aficionados. Whatever the source, whoever the sponsor, the group fails to recognize two fundamental facts...and thus continue to flail at windmills.

First, the real war is fought in the market place, not on the Internet. **'May the best marketer win!'** That's where it counts...and we trust the integrity of the supplier and the judgment of the buyer out there and believe in the buyer's ability to sort out the pluses and minuses for themselves. We also trust in their ability to ignore specious claims and misleading horror stories.

Secondly, the longer term issue is software not hardware. Every manufacturer of hardware should hang a large banner on every wall of their factory and office. The banner should say, **'It's the software, stupid!'** Software sells hardware and software makes the user happy with the hardware...and it is never, ever the other way around.

The Digital Journal takes no position in this fray. Both modes, Clover and Pactor II, received extensive coverage over the years. A special issue was devoted to the subject in the summer of 1994! The most recent article, submitted at my request, appears in this issue and is written by Tom Rink DL2FAK. Please note that no changes were made in his manuscript.

More articles will appear as new developments warrant coverage. Meanwhile the personal preferences of the columnists and other contributors will be expressed, issue after issue, and will be obvious to the reader. Those preferences and opinions, as always, will be based on their own personal experiences on the air and will not reflect the position of either the Digital Journal or the IDRA.

We believe the reader should be informed. We believe the reader should then make up his or her own mind. We believe our task to be the reporting on the legitimate news and developments regarding these modes. We will continue to do so.

We also believe that this outpouring casts an unfavorable light on both the sender and the digital community!

Big changes at the website! I have grown impatient with my Internet service provider, otherwise known as Earthlink. The service continued to deteriorate through March and it became nearly impossible to maintain the Editor's Desk. The mail service was worse. So changes are in the works. By the time you read this, the Editor's Desk should be resident at <<http://www.n2hos.com/digital/>>. Also find a new feature there

called DX. Yes, Don's column and his 'late breaking news' will be found at the same address <<http://www.n2hos.com/dx/>> Create new bookmarks in your browser now.

My good friend Christine Paustian of Netsurf Technologies somehow acquired the domain name over this past weekend and guaranteed an early transfer (The switch was actually made April 15th). She knows more about this crazy, booming business than anyone I know. I trust her implicitly. She also promises far better response from this server. There will be for the next sixty days or so, for those who log in at the Earthlink address, a single page reference and link to the new site.

Please let me know how the new site works out from the browser's point of view...and your comments about content as well. We want to create something that not only supplements the Digital Journal but delivers something of value to you. So, sound off!

The Internet rockets along and news of it pervades our lives. There is a constant presence in the daily newspaper (for the shrinking number who still read one), local or national TV, computer catalogs and junk mail (I quit counting the 'free' offers after the first two dozen 3½ inch floppies and the first dozen CD-ROM disks arrived in the mailbox). Now probably number one on the conversational hit-parade as well, it is a difficult subject to avoid ... in amateur radio circles as well. We sense the impact wherever we turn. Take another look at AA5AU's DX column and think a bit about OH2BUA's 'super cluster.' Or, consider N3PGG's remarks in the NTS column. When it comes to DX reporting and certain types of traffic forwarding, even now the Internet substantively improves on the methods we have used in the past. Each case replaces a portion of our traditional on-air activities but it uses none of our spectrum, nor our repeaters and requires no RF hardware. No license is required, either. Is there more to this story?

Yes, lots more. The DXer's use of the Internet surprises no one. Those serious enough to be on or near Honor Roll status have always used other forms of technology to accomplish their goal, regardless of nationality or mode. Fax, phone and pager contacts have long been basic tools for those few who have a confirmed, astronomical country count. Logically, they jumped into packet when the Cluster came down the pike, just as they now have adopted the Internet as their own. Both times the new 'thing' processed and delivered more DX information faster than ever before. That's what they want and need to be successful. No argument.

The traffic handling issue is seemingly more complex. There is a surprisingly large group (some of whom no doubt are also serious DXers) who stand firmly opposed to any use of the Internet when it comes to passing traffic. Their view is that 'It isn't amateur radio if the message doesn't travel all the way by radio!' NTS traffic must move via radio, only! Such arguments sound good and traditional and even tend to make people feel warm and cozy about how amateur radio is standing by, practicing, just waiting for the need for emergency communication. But I don't think that bucket holds much water.

In truth, as long we are charged with the responsibility of pro-



SOFTWARE STORE

IDRA • PO Box 2550 • Goldenrod, FL 32733-2550

Tel: 407/677-7000 • Fax: 407/671-0194



SOFTWARE

Q EXPRESS 3.5 - Windows program. Best Clover control program available - also handles Pactor, Amtor & RTTY. Send digitized and compressed voice, video and data. Run a full Clover BBS. Full duplex. Does all of this while maintaining keyboard QSO. Requires HAL PCI-4000, DSP4100 or new HAL P38. Available exclusively from IDRA for \$50.00. UPGRADE from 2.x: \$25.00. By TY1PS.

Q RTTY by WF1B - DOS program. For most TNCs. Ultimate contesting tool for novice and expert. Supports all major RTTY contests and Expeditions. Features include automatic call sign capture, dupe checking, country & multiplier identification, mouse support and much more. \$40.00.

Q LOG-EQF - Complete computer based logging system. Your total control center for on-the-air activity. Features easy logging, data terminal, Packet Cluster (tm), rig control, beam headings, QSL labels, DXCC, WAS and much more. A DOS program which works as a DOS application in Windows. \$30.00. On a tight budget? **Q LOG-EQF-JR** (\$20.00) is identical without provision for radio and TNC interfaces. Registered users also get FILE-EQF, WAS-EQF and DX-EQF utilities for import/export and WAS/DXCC record keeping. By N3EQF.

Q RIG-EQF - Have your computer control your Kenwood rig. Various parameters can be controlled and monitored via your computer increasing the power and flexibility of your station. Includes large digital display. Sophisticated, programmable scanning and much more. \$20.00.

By N3EQF.

Q RagChew - Windows software for HAL PCI 4000 or P 38 cards. Developed by Jim Jennings, KE5HE, to take full advantage of your HAL card. Send/receive RTTY, AMTOR, PACTOR and ASCII all from the same friendly, easy to use screen. Requires Windows 3.0 and DOS 6.0 or higher. Available only with embedded call sign. \$30.00.

Q PakTERM - Here is how to take your PacComm PTC to the its limits. Makes your life easier with an assortment of automated features. There is no better DOS based PTC terminal available. Only \$30.00. By AA4PB.

Q SNAPmax - New & improved version of the famous SNAP DX propagation software. Makes finding a radio path that is open at a specific time and frequency a snap. No more guessing. Just call up SNAPmax. By WA3ZKZ. Exclusively from IDRA for \$40.00 (\$25.00 for upgrade from SNAP).

BOOKS

Q BASIC PACKET RADIO BOOK - (2nd Edition) - In this edition you will find updated information based on based on readers comments. A chapter on operations via the Internet, Wormholes and LAN-LINK 2.30 documentation. What is packet radio. How to use it. LAN & PBBS information. Using nodes, Packet Clusters, servers. LANLINK manual and evaluation diskette. \$29.95.

Q RS232C & COM PORTS Booklet - If you use a computer in conjunction with ham radio, you will find this an invaluable tool to have in your shack.

**NOW ... Get all 1995 issues of the
DIGITAL JOURNAL ON 3.5" Disks**
(One month per disk in Adobe's PDF format)

Order:

1 Month	\$5.00
3 Months	\$15.00
6 Months	\$25.00
12 Months	\$45.00

All orders include **FREE Viewer**
Add \$3.50 for S/H

\$5.00 SOFTWARE SPECIALS

Order any of the following programs for only
\$5.00 including **FREE S/H**

- ☐ Winlink : the classic HF BBS software
- ☐ WORLI : the other classic BBS software
- ☐ Lan-Link : Joe Kasser's popular all-mode tnc program
- ☐ HYLOG : a full-featured, yet simple logging program
- ☐ Express 3.5 Upgrade : you must have 3.02 on you disk
- ☐ Excel DXCC Template : Don AA5AU's creation
- ☐ RITTY Demo : Brian K6STT's software TNC for 16bit S
- ☐ HAL Files : latest version for P38/PCI4000/DSP4100
- ☐ Scan : a solution to frequency scanning; requires rs232 int.

ITEM(s) ORDERED

PRICE

_____	<div>Mail to IDRA / Digital Journal PO Box 2550 Goldenrod, FL 32733-2550 with your check or money order payable in U.S. Funds ONLY or FAX to 407-671-0194. --Master Charge and Visa accepted--</div>	_____
_____		_____
_____		_____
_____		_____
_____		_____

Disk Size: 3.5"

Shipping & handling, U.S./N.A.: \$2.50 / DX: \$5.00 Total \$ _____

Note: Credit Card orders require minimum purchase of \$25.00

VISA _____ Master Card _____ Number # _____ Exp Date _____

Name _____ Callsign _____ Signature _____

Address _____

City _____ State/ Country _____ Zip or Postal Code _____

viding occasional emergency communication we had best learn how to use our entire portfolio of communication options. We must learn how to harness and coordinate all wired and wireless forms available to us, including cellular and the Internet. The challenge is to manage the 'system' of communications and come up with the combination that provides the most speed and highest level of data integrity possible ... and do so without artificial limitations. Who among us is going to stand on tradition and use only HF radio to forward urgent traffic under today's conditions when a long haul Internet link is available? All we need to do is switch to the high-speed modem in the same computer we are using for radio. Or who will use the two meter rig in our left hand to summon emergency aid if we have a cellular phone in the other hand? Good questions, questions about NTS and other aspects of our hobby as well.

Manage the 'system,' I said. That's a bigger challenge than it might seem. The 'system,' you see, is changing at the speed of light. The telephone 'system' is destined to fade away as it becomes part of a larger technology. The wired and wireless 'system,' the computer 'system,' the radio and television broadcasting 'system,' and even the photographic image 'system'—all are converging and forming into a new, unified and much broader and still ill-defined (and controversial) service for both business and consumers. Drastic changes are required to bring this about and we read about them every day—downsizing, write-offs, mergers, acquisitions, bankruptcies, privatizing, legislation and, oh yes, lawsuits. And we hear the drumbeat hype telling us of the excitement of new and different concepts of what the ultimate service is going to be.

Some describe this electronic 'system' of the future in simplistic terms and call it '500 channels' of cable with phone and data lines riding along in the coax. Others see it as a sort of 'super Internet' with broadband lines serving every home and business—the 'one new line provides all' concept. Visions are a dime a dozen and the risks and investments made each day as companies pursue their own version stagger the imagination. Some see the computer at the center of it all, some a telephone-like device, still others the television set. All see their future as loaded with high volumes and great profits. Don't bet on it.

Who's to know? Surely not me, but I am going to take my turn at bat because I think that, along with a lot of other traditions and systems, ham radio (as we practice it today) is at risk as well. How could that possibly be? I answer the question with another question. Who among us is going to invest money, blood, sweat and tears in a rig and antenna—and a license—to do what anybody sitting at home can do for free (and without a license!) on the Internet of the year 2000? And the answer in my judgment is few, very few. Oh yes, there will be those aging folks (like me) who will stick with it for the rest of their natural lives and those wonderful technical tinkerers who find fulfillment, as they do now, in inventing rather than communicating. We need both.

Maybe the radio sports of DX and Contest work will survive in some form (heck they might even turn pro, or become Olympic sports!). And there will be a horde of two meter phone addicts, despite the fact that the cellular phone has replaced the cigarette and the police walkie-talkie as standard props in movies and television. But for those who are in the hobby for the pleasures and challenges of technology's latest offerings, for the discovery and nurturing of new friendships and the adventure of pure exploration, there is a new world out there. If you thrill at the sheer joy of multimedia communication to all parts of the world (whether or not there is an Internet DXCC, WAZ or WAC) the new 'system' may push the transceiver and its peripherals into the background. Way into the background. They might not

be part of the 'system' at all. The excitement inherent in a broadband, high-speed link to the world, one that is open and free 24 hours a day may well be enough to satisfy our deepest longings, thus satisfying those thirsts that brought us into the hobby in the first place. And the lure of such marvels diverts the attention of our technically talented youngsters away from radio's narrow slice of tomorrow's technology.

I think the first omens are there for all to see and that the evolution is already taking place. The computer 'system' is moving to center stage in many shacks and in so doing becomes our communication 'system' by default. And so long as anyone of us, regardless of age or technical background, can acquire and quickly learn to operate a loaded Pentium computer for \$1000 or so (complete with all the communication essentials, including multimedia), the greater the momentum.

What do you think? (And bring a tape recorder to Dayton for I am certain we will hear a lot more about this issue in the hospitality suite in Dayton!).

Speak not of DOS in the past tense. Aside from its residing behind Win95, Bo W8ISG faxed from Michigan the other day and proved that DOS is alive and well and living in the hearts of many digital operators as well. His plea:

"Is there any IDRA member who would be willing to share a terminal program, no matter how rudimentary, written in any version of BASIC for DOS?"

Laptops older kind, the ones with just a floppy disk drive (and not using *Windows*) are perfectly usable with a terminal program and are getting cheaper, as the newer models come out. I use a Toshiba T-1000 at shack and leave it on for months without a fan sucking dust all the time, or keeping anyone awake.

The terminal program that I have been using is no longer supported and it does not support Factor. Other programs are lacking in some other way, such as not providing for break-in CW.

I would like to develop a program in cooperation with other hams, a program that could be modified and upgraded continually as new ideas and requirements arise. I have programmed in BASIC for 24) years, but in the limited arena of mailing list maintenance, membership correspondence, stock market analysis and so on and therefore, I am not fluent in the more sophisticated routines, such as writing macros or reading from a terminal unit, etc.

Perhaps we could have a group going continuously, devoted to evolving the best terminal program around, at least for those of us who haven't jumped on the *Windows* or \$5,000 laptop wagon. No money would change hands, except possibly for disks and postage." Contact Bo Thunman W8ISG, Augusta MI 616 731 5600 voice/fax.

Needless to say, the Digital Journal's Disk Library would be more than pleased to distribute the program, once written. Same goes for the IDRA website. If anyone knows of a program that meets these specs, please get in touch with the Digital Journal and we will let the world know.

May looms large in our plans. First, we fly back to New York on May 10th and take up a four-month residency in Somers, NY¹ where, we hope, all traces of the worst winter in memory will be gone. On the day we arrive, a guest from Benin will arrive as well. Peter TY1PS will be with us for the six days



Right On Target

CLASSIFIED AD DEPARTMENT

First 30 words \$7.50, additional words 10 cents each. Cash with Ad. Deadline for ads is the 5th of the prior month of publication. (Example - Ad arrives by the 5th of December, will appear in the December issue.)

NEWS - NEWS - NEWS - NEWS . . . Amateur Radio's Newspaper "WORLD RADIO". One year subscription (12 issues) \$14.00 for U.S., non U.S. \$24.00, 2 Year subscription (24 issues) \$27.00 U.S., non U.S. \$47.00, 3 year subscription (36 issues) \$39.00 U.S. non U.S. \$69.00, Lifetime subscription \$140.00 U.S. non U.S. \$240.00. Contact: WORLD RADIO, P.O. BOX 189490, Sacramento, CA 95818

CQ Magazine, The Radio Amateur's Journal —If you enjoy ham radio, you'll want CQ. Published monthly, CQ brings you the best writers for some of the finest reading in Amateur Radio. Subscribe now and save up to 35% OFF newsstand prices! One year \$24.50 U.S., \$27 Canada/Mexico; Foreign Air Mail \$82. Contact CQ Communications, Inc., (also publishers of Popular Communications, ComputerCraft, Electronic Servicing & Technology and numerous amateur radio books/videos), 76 North Broadway, Hicksville, NY 11801, Phone (516) 681-2922 or FAX (516) 681-2926.

BACK ISSUES - All Back Issues of the Following: RTTY Digital Journal - ATVQ - A5 SPEC-COM & ATV TODAY. Write for list & prices - SASE - ESF Copy Service, 4011 Clearview Dr., Cedar Falls, IA. 50613 (319) 266-7040

RTTY CONTEST SOFTWARE: This is the program used by WINNERS. RTTY by WF1B is the premier teletype contest software. Supports CQWW, ARRL, SARTG, BARTG contests. New DXpedition mode recently used by AHIA. Supports HAL PCI-3000, PK-232, KAM, MFJ-1278, UTU, AMT-1, and Standard TUs. Online features: Automatic duping, Automatic multiplier identification, Automatic scoring, Mouse support, Break-in buffer, Buffer tags for dynamic custom transmissions, File transfer. Post Contest features: Complete paperwork generation, QSL labels, Statistics. Call (401) 823-RTTY for fact sheet. IBM-PC, \$41.95 (US/VE) \$44.95 (DX). Specify disk size. Wyvern Technology, 35 Colvintown Road, Coventry, RI 02816-8509

WJ20 MASTER QSO LOGGING PROGRAM - Log all your QSO's in one main database, prints QSL cards or labels, performs award tracking, interfaces with all callsign databases, displays beam headings and distances, controls your radio, imports data from dozens of other sources. Call for free information packet and demo 1-800-944-WJ20. Jul-96

DSP MODEM: RITTY 1.0 is a high-performance software modem that runs in your PC and uses your sound card. RITTY uses a limiterless front-end, optimal matched filters, automatic threshold correction, numerical flywheel, and other advanced techniques to recover RTTY signals ordinary modems can't copy. RITTY features a graphical FFT tuning indicator that's better than a scope, demodulated-signal display, signal-timing analysis, adjustable mark/space frequencies, precision AFSK, FSK/PTT outputs, and pop-up menus. RITTY supports RTTY by WF1B. 386/40 or better, math coprocessor, Sound Blaster 16, and VGA required. \$100. Add \$5 overseas. Visa, MasterCard, Discover, U.S. check, cash, or money order. Brian Beezley, K6STI, 3532 Linda Vista Dr, San Marcos, CA 92069. (619) 599-4962. k6sti@n2.net. Sept-96

HAL ST-6000 Deluxe RTTY/CW HF Computer Terminal Unit. Excellent condition. Complete with CRT tuning scope, Technical manual, and complete set of new interface connectors. \$275.00. K7HPH, Mark 801-298-2388.

HAL-ST-8000 Top-of-the-line RTTY/CW HF MODEM. Excellent condition. Version 2.0 Firmware. CRT tuning scope, Operations and Maintenance manuals, and new interface connectors. \$1200.00. K7HPH, Mark 801-298-2388.

Is it time to renew your subscription/membership? Be sure to check your mailing label!

New or Renewals. Please fill out and mail form below with appropriate payment to:

IDRA/Digital Journal • P.O. Box 2550 • Goldenrod, FL 32733-2550



Please forward my annual membership in the International Digital Radio Association (IDRA) and subscription (12 issues per year) to the **Digital Journal** - immediately!



Please check the appropriate boxes and enclose payment (**in U.S. FUNDS ONLY**): ☐ NEW ☐ RENEWAL

- ☐ **1 Year:** ☐ \$25 U.S., Canada, Mexico ☐ \$32 1st Class-North America/Surface-DX ☐ \$42 AirMail - DX
☐ **2 Year:** ☐ \$47 U.S., Canada, Mexico ☐ \$60 1st Class-North America/Surface-DX ☐ \$78 AirMail - DX
☐ **3 Year:** ☐ \$68 U.S., Canada, Mexico ☐ \$85 1st Class-North America/Surface-DX ☐ \$114 AirMail - DX

☐ **Contribution \$** _____ IDRA Non-Profit status could make your contribution fully tax deductible.

Credit Card ☐ Visa / ☐ MC # _____ Exp. Date _____ Signature _____

(For faster service, credit card orders accepted by phone. Fax your order to IDRA at: 407-671-0194)

Name _____ Call _____

Address _____

City _____

State/Country _____ Zip/Postal Code _____ - _____

Internet or other On-Line Address(s): _____ Age: _____

before we depart for Dayton. I have a long list of technical tasks designed for his undoubted genius and plan on keeping him busy the entire time...busy making my life easier after he departs! He might even solve the antenna-in-the-attic-in-the-house-in-the-valley problem! But I am sure we will have some fun as well. We always do. While we will miss Bibi, his XYL, we fully intend to see both of them in Florida in November when Gen and I celebrate our 50th anniversary together.

Then Dayton and the fun and the crowds and the rain and fellowship and the mud and late nights and the early mornings. I will see you there!

A final note: mail or E-mail your proxy today. Use the format inside the front cover and send it to <matlick\$gate.com> or give your proxy to any other director or individual who will be at Dayton. That is your right as a member. But send it so you will be represented.

Final, final note. If this was the April issue, I would create a funny story out of this affair. But now it needs to be reported as

news. Yes, there is an Internet DXCC effort going on. I have seen the list and know the call sign of the promoter. But I have destroyed the evidence!

The real final note. Once again there are new files to be downloaded for your PCI4000 and P38. They are now on the IDRA website, the HAL BBS and from the Disk Library. To quote, "The FSK demodulator now uses a better filter algorithm and it has the ATC capability built in, but it is not yet enabled by default." Early reports suggest a big improvement in the P-mode. Which reminds me, HAL's new Internet address is <halcomm@cu-online.com>.

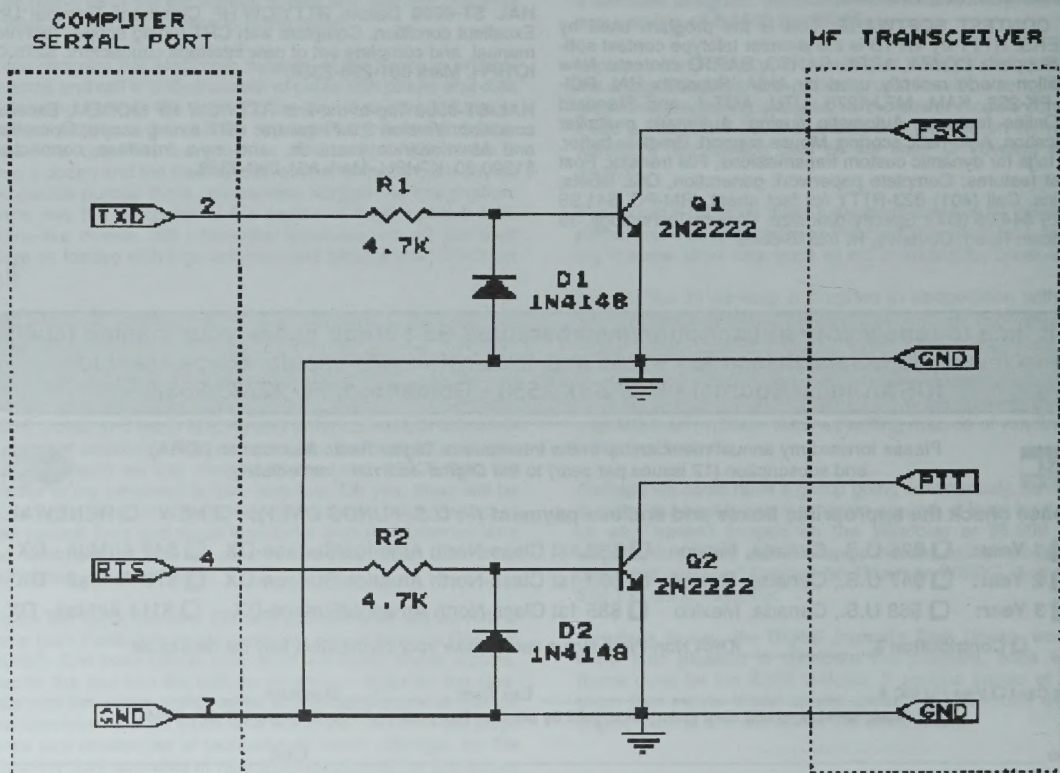
The last real final note. The edited help files for Express went back to TY and we are now awaiting the 3.6 update. I suspect it will be available by the time you read this, despite the appearance of some last minute bugs.

73, de Jim N2HOS sk

¹ The address is PO Box 596 Somers, NY 10596-0596.

Phone is 914 276 1058. Fax 914 276 1059.

Note: A reference was made last month in Glenn Vinson's article about RITTY to the "RS-232 Converter" diagram. The sketch was inadvertently omitted. It is reproduced below so that anyone interested in the software TNC approach can complete the necessary groundwork. Our apologies to W6OTC for the omission.

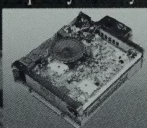


RS-232 LEVEL CONVERTER

ICOM's New Dual Bander Has an Easy to Use, Full Control Mic!

KEEP YOUR EYES ON THE ROAD! – Night or day, enjoy one handed operation of the IC-2710H with its all-new FULL CONTROL HM-98 DTMF mic. Directly enter frequencies straight off the backlit mic keypad! Tailor your rig operations to be as simple or advanced as you want. There's two programmable function keys right on the mic!

220 MEMORIES – Scan and listen in on whatever frequencies you program in. Quick and easy optional PC programmable cloning software (CS-2710H) is available for additional customizing. **HIGH SPEED SCANNING** – Increase your chance of catching communications! Scan 6 pairs of programmable scan edges (the upper and lower frequency limits you set to scan) or use the memory scan.

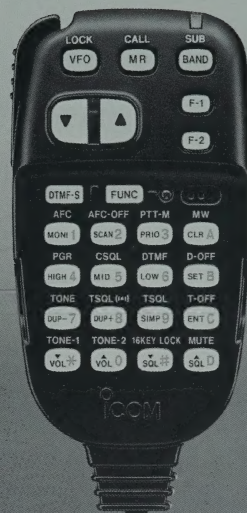


RUGGED ICOM CONSTRUCTION – The one piece, die-cast aluminum frame makes for an efficient heat sink. A quiet, rear-mounted fan helps to keep things running cool.

RF ATTENUATOR – A variable RF attenuator directly links to the squelch control to keep signals coming in loud and clear. Adjust the attenuation as conditions and locations change!



Use the quick-attach cover to protect keypad settings.



IC-2710H

Easy Control on the **GO!**



ICOM'S ON THE WEB!
<http://www.icom-america.com/icom>

Call ICOM's brochure hotline: (206) 450-6088
Contact ICOM Technical Support in the HamNet Forum on CompuServe @75540.525 (Internet: 75540.525 @compuserve.com.) © 1996 ICOM America, Inc., 2380-116th Ave. N.E., Bellevue, WA 98004. The ICOM logo is a registered trademark of ICOM, Inc. All stated specifications are subject to change without notice or obligation. All ICOM radios significantly exceed FCC regulations limiting spurious emissions. CompuServe is a registered trademark of CompuServe, Incorporated, an H&R Black Company. 2710BW396Y

IC-2710H FEATURES:

- 2M (50 Watts) & 440 MHz (35 Watts)
- 3 Selectable Power Levels: 50 (or 35), 10, 5 Watts
- Wide Band Rx (118-174, 400-470 MHz) • 50 CTCSS Frequencies • 8 DTMF Memory Channels, 16 Digits Each • Built-In Duplexer • Independent Volume, Squelch & Function Switches • V/V, U/U Simultaneous Receive • 4 Independent VHF/UHF RF Circuits • Front Panel Separation Cables – 11.5 Ft or 23 Ft (Opt. OPC-600 or OPC-601) • Pager, Code Squelch and External DTMF Control Via Sub Band (Opt. UT-49) • Pocket Beep and Tone Squelch (Opt. UT-104) • Wireless Mic (Opt. HM-90 + EX-1759 Infrared Receiver)

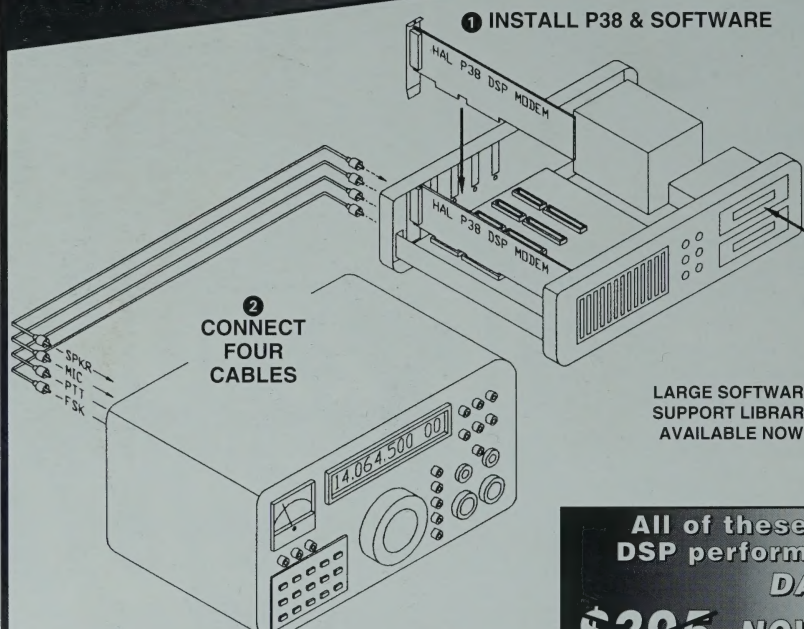
ICOM



Digital Communications As Easy As 1,2,3 With The Most Affordable Multimode *DSP* Modem This Is Your Connection To The Digital World

P38

1 INSTALL P38 & SOFTWARE



2 CONNECT FOUR CABLES

3 WORK THE DIGITAL WORLD

LARGE SOFTWARE SUPPORT LIBRARY AVAILABLE NOW!

- EXPRESS
- CLOVER
- AMTOR
- PACKET
- BAUDOT
- ASCII
- WILINK
- BBS NETS
- RAG CHEW
- DX CONTESTS
- IMAGE FILES
- DIGITAL VOICE
- VORL
- HAL P-38
- ERROR FREE
- HIGH SPEED
- WEAK SIGNAL
- VF18
- WORK ALL MODES & DATA TYPES WITH TOP PERFORMANCE.
- AA-RE
- FUTURE

All of these modes with DSP performance for only
DAYTON SALE
~~\$395~~ NOW \$329.95
Limited Time Only

Operates CLOVER, AMTOR, PACTOR, and RTTY
CALL OR FAX THE HAMS AT HAL
MIKE, W9KVF OR MARK, WB9HFK
PHONE (217) 367-7373 FAX (217) 367-1701



HAL Communications Corp.
P.O. Box 365
Urbana, IL 61801 USA
E-Mail: halcomm@prairienet.org

